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ABSTRACT

Designed to supplement the descriptive authoring flowcharts presented in a companion volume, this manual includes specific guidance, examples, and other information referred to in the flowcharts for the implementation of the third phase of the Instructional Systems Development Model (ISD). The introductory section includes definitions; descriptions of classification systems and flowchart symbols; instructions for using the Job Aid Manual; a description of the Job Aids Resource Manual; an explanation of the reporting system; information on the use of field surveys and panels; and an example of a closed form questionnaire together with the procedures for its administration. Activities covered in Phase III--DEVELOP are (1) specification of learning events/activities, (2) specification of instructional management plan and delivery system, (3) review and selection of existing materials, (4) development of instruction, and (5) validation of instruction. (LLS)

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JOB AID MANUALS FOR PHASE III-DEVELOP OF THE INSTRUCTIONAL SYSTEMS DEVELOPMENT MODEL

MANPOWER AND EDUCATIONAL SYSTEMS TECHNICAL AREA

MAY 1980

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20. ABSTRACT (Continue on reverse side if necessary and identify by block number)

The purpose of the research was to develop job aids ("How to do it" guidance) for the activities identified in the Instructional Systems Development Model (ISD, TRADOC Pamphlet 350-30). Job aids are available for each of the five phases of the ISD model - ANALYZE, DESIGN, DEVELOP, IMPLEMENT, and CONTROL. Each job aid is composed of a Descriptive Authoring Flowchart and a Job Aid Manual. This volume, covering Phase III-DEVELOP, contains an Introduction to the Use of the Job Aids and the Job Aid Manuals for Blocks III.1 through III.5. The Descriptive Authoring Flowcharts for Phase III are available in a companion

20. document.

FOREWORD

The Computer-Based Instructional Systems Team of the US Army Research Institute for the Behavioral and Social Sciences performs research and development in the area of educational technology that applies to military training. Of interest are methods for training individuals to develop and utilize instructional courseware in reasonable time, at acceptable cost. ARI research in this area is conducted under Army Project 2Q263743A794, FY 80 Work Program.

This Research Product is one of a series of 10 volumes designed to provide guidance on the application of the Instructional Systems Development model. The work was accomplished by Mr. Russel E. Schulz and Mrs. Jean R. Farrell, Human Resources Research Organization, Contract No. DAHC19-78-C-0010 and personnel of the ARI Manpower and Educational Systems Technical Area. Personnel from the Directorates of Training Development at Ft. Belvoir, VA and Ft Gordon, GA provided assistance in the evaluation of the work.

JOSEPH ZEIDNER
Technical Director

JOB AID MANUALS FOR PHASE III-DEVELOP OF THE INSTRUCTIONAL SYSTEMS DEVELOPMENT MODEL

BRIEF

Requirement:

To develop a series of job aids for the activities identified in the Instructional Systems Development Model (ISD, TRADOC Pamphlet 350-30).

Procedure:

A series of job aids were designed and developed for each of the five phases of the ISD model: ANALYZE, DESIGN, DEVELOP, IMPLEMENT, and CONTROL. Each job aid is comprised of Descriptive Authoring Flowcharts and a Job Aid Manual which provide specific guidance, examples, and references necessary to produce the product specified by the ISD Block it covers.

Utilization:

These job aids will be used by military training personnel in meeting the requirements of the ISD model.

JOB AID MANUALS FOR PHASE III-DEVELOP OF THE INSTRUCTIONAL SYSTEMS DEVELOPMENT MODEL

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WHAT ARE JOB AIDS?

- Job Aids are intended to be stand-alone, step-by-step procedural guides which we hope will permit you to turn out quality instructional products quickly and easily. We also hope that they will be equally useful to individuals at all experience levels of the instructional systems development process.
- Job Aids are intended to address real needs. Prior to the development of the Job Aids, instructional technology personnel (individuals like yourself) at the U.S. Army Signal Center and the U.S. Army Engineer School were surveyed to determine specific ISD needs—those areas in which they had the greatest need for assistance and information. Emphasis was placed on satisfying these needs in the development of the Job Aids.
- Job Aids use the same classification system for identifying the activities that must be performed in instructional systems development (ISD) as does TRADOC Pamphlet 350-30 (Interservice Procedures for Instructional Systems Development).

WHAT IS THE CLASSIFICATION SYSTEM USED IN TRADOC PAMPHLET 350-30 AND JOB AIDS?

- TRADOC Pamphlet 350-30 suggests that instructional systems development be conducted in five phases:
    - Analyze
    - Design
    - Develop
    - Implement
    - Control
- For those of you who are unfamiliar with TRADOC Pamphlet 350-30 we suggest you read the brief description of each phase of the ISD process as shown in Table 1. In the TRADOC Pamphlet each ISD phase is divided into specific activities called ISD blocks. Table 2 shows these ISD blocks and Table 3 shows the outcome of each block.
- Job Aids cover the activities required for the first three phases of the TRADOC Pamphlet (i.e., Analyze, Design, and Develop instructional systems). The Aids cover each ISD block within these phases except for ISD Block I.1, Analyze Job.

Table 1

FIVE PHASES OF INSTRUCTIONAL SYSTEMS DEVELOPMENT (ISD)

THE FIVE PHASES ARE:

PHASE I **ANALYZE**	Inputs, processes, and outputs in Phase I are all based on job information. An inventory of job tasks is compiled and divided into two groups: tasks not selected for instruction and tasks selected for instruction. Performance standards for tasks selected for instruction are determined by interview or observation at job sites and verified by subject matter experts. The analysis of existing course documentation is done to determine if all or portions of the analysis phase and other phases have already been done by someone else following the ISD guidelines. As a final analysis phase step, the list of tasks selected for instruction is analyzed for the most suitable instructional setting for each task.
PHASE II **DESIGN**	Beginning with Phase II, the ISD model is concerned with designing instruction using the job analysis information from Phase I. The first step is the conversion of each task selected for training into a terminal learning objective. Each terminal learning objective is then analyzed to determine learning objectives and learning steps necessary for mastery of the terminal learning objective. Tests are designed to match the learning objectives. A sample of students is tested to insure that their entry behaviors match the level of learning analysis. Finally, a sequence of instruction is designed for the learning objectives.
PHASE III **DEVELOP**	The instructional development phase begins with the classification of learning objectives by learning category so as to identify learning guidelines necessary for optimum learning to take place. Determining how instruction is to be packaged and presented to the student is accomplished through a media selection process which takes into account such factors as learning category and guideline, media characteristics, training setting criteria, and costs. Instructional management plans are developed to allocate and manage all resources for conducting instruction. Instructional materials are selected or developed and tried out. When materials have been validated on the basis of empirical data obtained from groups of typical students, the course is ready for implementation.
PHASE IV **IMPLEMENT**	Staff training is required for the implementation of the instructional management plan and the instruction. Some key personnel must be trained to be managers in the specified management plan. The instructional staff must be trained to conduct the instruction and collect evaluative data on all of the instructional components. At the completion of each instructional cycle, management staff should be able to use the collected information to improve the instructional system.
PHASE V **CONTROL**	Evaluation and revision of instruction are carried out by personnel who preferably are neither the instructional designers nor the managers of the course under study. The first activity (internal evaluation) is the analysis of learner performance in the course to determine instances of deficient or irrelevant instruction. The evaluation team then suggests solutions for the problems. In the external evaluation, personnel assess job task performance on the job to determine the actual performance of course graduates and other job incumbents. All collected data, internal and external, can be used as quality control on instruction and as input to any phase of the system for revision.

Table 2

ISD BLOCKS IN EACH OF THE FIVE ISD PHASES

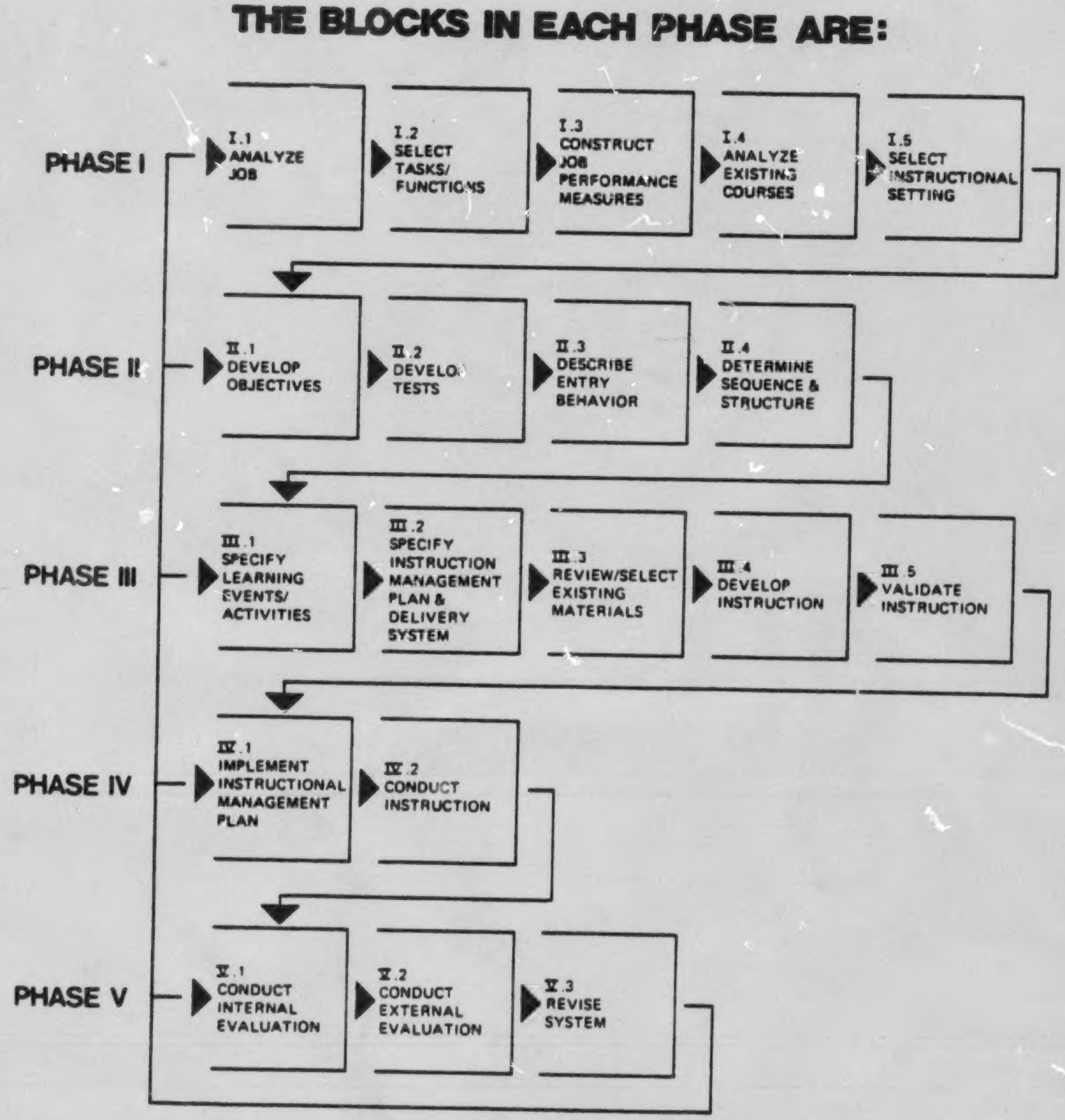

THE BLOCKS IN EACH PHASE ARE:
PHASE I
I.1 ANALYZE JOB
I.2 SELECT TASKS/ FUNCTIONS
I.3 CONSTRUCT JOB PERFORMANCE MEASURES
I.4 ANALYZE EXISTING COURSES
I.5 SELECT INSTRUCTIONAL SETTING
PHASE II
II.1 DEVELOP OBJECTIVES
II.2 DEVELOP TESTS
II.3 DESCRIBE ENTRY BEHAVIOR
II.4 DETERMINE SEQUENCE & STRUCTURE
PHASE III
III.1 SPECIFY LEARNING EVENTS/ ACTIVITIES
III.2 SPECIFY INSTRUCTION MANAGEMENT PLAN & DELIVERY SYSTEM
III.3 REVIEW/SELECT EXISTING MATERIALS
III.4 DEVELOP INSTRUCTION
III.5 VALIDATE INSTRUCTION
PHASE IV
IV.1 IMPLEMENT INSTRUCTIONAL MANAGEMENT PLAN
IV.2 CONDUCT INSTRUCTION
PHASE V
V.1 CONDUCT INTERNAL EVALUATION
V.2 CONDUCT EXTERNAL EVALUATION
V.3 REVISE SYSTEM

Table 3

OUTCOMES OF ISD BLOCKS

THE OUTCOMES OF THE BLOCKS ARE:

I

.1 . . . a list of tasks performed in a particular job.

.2 . . . a list of tasks selected for training.

.3 . . . a job performance measure for each task selected for instruction.

.4 . . . an analysis of the job analysis, task selection, and performance measure construction for any existing instruction to determine if these courses are usable in whole or in part.

.5 . . . selection of the instructional setting for task selected for instruction.

II

.1 . . . a learning objective for and a learning analysis of each task selected for instruction.

.2 . . . test items to measure each learning objective.

.3 . . . a test of entry behaviors to see if the original assumptions were correct.

.4 . . . the sequencing of all dependent tasks.

III

.1 . . . the classification of learning objectives by learning category and the identification of appropriate learning guidelines.

.2 . . . the media selections for instructional development and the instructional management plan for conducting the instruction.

.3 . . . the analysis of packages of any existing instruction that meets the given learning objectives.

.4 . . . the development of instruction for all learning objectives where existing materials are not available.

.5 . . . field tested and revised instructional materials.

IV

.1 . . . documents containing information on time, space, student and instructional resources, and staff trained to conduct the instruction.

.2 . . . a completed cycle of instruction with information needed to improve it for the succeeding cycle.

V

.1 . . . data on instructional effectiveness.

.2 . . . data on job performance in the field.

.3 . . . instructional system revised on basis of empirical data.

WHAT SOURCES OF INFORMATION WERE USED IN THE DEVELOPMENT OF JOB AIDS?

- Job Aids are not just a re-hash of TRADOC Pamphlet 350-30. We use the same classification system for ISD phases and the blocks within the phases as does the TRADOC Pamphlet. However, the guidance and information provided in the Job Aids come from a variety of sources, the TRADOC Pamphlet being only one such source. We have gathered information from any source that we could locate. If the information was judged to be good it was included in the Job Aids. In some instances the information in the Job Aid is based solely on the educational technology experience of the project staff.

- It is not within the scope of this Introduction to list all sources of information examined or used in the development of the Job Aids. However, in addition to TRADOC Pamphlet 350-30 examples of other sources of information would include the following types:
  - TRADOC Circulars
  - DA Pamphlets
  - Printed Guidance prepared by TRADOC Schools (e.g., U.S. Army Signal Center)
  - Army Research Institute Documents
  - HumRRO publications
  - Other military and civilian agencies

WHAT JOB AIDS ARE PRESENTLY AVAILABLE AND WHAT DO THEY CONSIST OF?

- There are thirteen Job Aids presently available. Each Job Aid is comprised of two documents. A brief description of each is provided below: (A complete description of how to use each is given on the pages that follow.)

  - Descriptive Authoring Flowcharts. The Descriptive Authoring Flowcharts (usually referred to as Flowchart Manuals) are the primary documents used in the Job Aids. They direct the user to specific guidance, examples and references provided in the Job Aid Manuals.

  - Job Aid Manuals. As stated above, the Job Aid Manuals provide the specific guidance, examples and references necessary to produce the product specified by the ISD Block they cover. In addition, each Job Aid Manual contains one or more Worksheets to use in the development of the product.

- Another important part of the Job Aids package is of course the document you are presently reading, Introduction to the Use of Job Aids and Job Aid Resource Manual.

- The specific Job Aids available are: (Flowchart Manual and Job Aids Manual for each).

  - Job Aid for Selecting Tasks for Training (ISD I.2)
  - Job Aid for Conducting Task Analysis (ISD I.3)
  - Job Aid for Analyzing Existing Courses (ISD I.4)
  - Job Aid for Selecting Instructional Settings (ISD I.5)
  - Job Aid for Developing Objectives (ISD II.1)
  - Job Aid for Developing Tests (ISD II.2)
  - Job Aid for Describing Entry Behavior (ISD II.3)
  - Job Aid for Determining Sequence and Structure (ISD II.4)
  - Job Aid for Specifying Learning Events and Activities (ISD III.1)
  - Job Aid for Specifying Instructional Management Plan and Delivery System (ISD III.2)
  - Job Aid for Review and Selection of Existing Materials (ISD III.3)
  - Job Aid for Developing Instruction (ISD III.4)
  - Job Aid for Validating Instruction (ISD III.5)

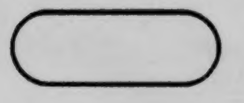
WHAT ARE THE MAIN PARTS OF THE FLOWCHART MANUAL?

- Scan through a few pages of your Flowchart Manual. Observe the following:
  - Flowchart symbols used
  - Instructions or questions within the flowchart symbols
  - Supplemental information opposite most of the flowchart symbols
  - Flowchart block and page numbering system
- For a complete description of each of the main parts of the Flowchart Manual see the pages that follow.

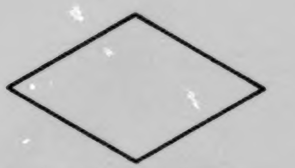
WHAT FLOWCHART SYMBOLS ARE USED IN THE FLOWCHART MANUAL?

- **Flowchart Symbols**

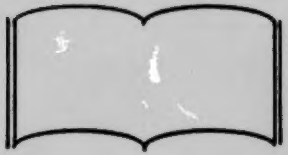
  — Only five symbols are used in the Flowchart Manual. These symbols and the instructions within them act as a road map to lead you step-by-step through the process of developing your particular product. We believe that after you have gotten used to using the Flowchart Manual you will find it a very useful control document. The five symbols used are as follows:



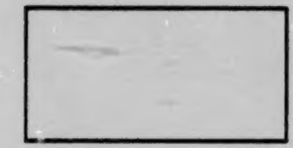
Start-Stop Symbol — Indicates either the start or stop of the activities called for in the Flowchart Manual.



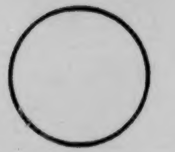
Decision Symbol — Indicates that you must make a decision at this point which will determine the path that you take thru the Flowchart Manual.



Manual Symbol — Indicates that you are to refer to the Job Aid Manual for specific additional guidance or instruction shown in the symbol.



Rectangle Symbol — Indicates an activity that must be performed but does not require specific additional guidance or instruction in the Job Aid Manual. (In some cases the user is given the option of going to the Job Aid Manual to see a completed example of the activity called for in the rectangle symbol).



Go To Symbol — Indicates a branch to some other flowchart block. The branch will either be to a previously encountered block or will jump you over blocks that can be omitted.

WHAT INSTRUCTION IS PROVIDED WITHIN THE FLOWCHART SYMBOLS?

- Each flowchart symbol except the Decision Symbol contains a brief statement of the activity that you are to perform. If this activity requires the completion of part of a Worksheet the specific part of the Worksheet will be identified (remember, each Job Aid includes one or more Worksheets). Decision blocks always contain a question that can be answered with a yes or no answer. The branch you take after the decision block will depend upon your answer.

WHAT IS THE PURPOSE OF THE SUPPLEMENTAL INFORMATION PROVIDED IN THE FLOWCHART MANUAL?

- The supplemental information that is located beside most of the flowchart symbols serves the following purposes:
  - Provides a more complete description of the steps or activities that must be performed in the ISD Block you are working in than does the flowchart itself.
  - Refers you to specific pages within the Job Aid Manual for specific guidance, examples and references needed for completing the activity called for in the flowchart block. (This is associated with the Manual symbol.)
  - For some flowchart blocks (rectangle symbol) examples of the completed activity are shown in the Job Aid Manual. The supplemental information indicates the specific page in the Job Aid Manual containing the example. However, the user has the option of going to the Job Aid Manual to see the example. (The Manual symbol, on the other hand, requires the user to go to the Job Aid Manual.)
  - Acts as an executive summary which will allow commanders and supervisors to obtain a picture of the activities required by the Job Aid without reading the entire Job Aid Manual.

WHAT IS THE FLOWCHART BLOCK AND PAGE NUMBERING SYSTEM?

- The flowchart block and page numbering system is as follows:
  - Flowchart blocks are numbered so that they can be easily referred to.
  - The page numbers in each of the 13 Flowchart Manuals are preceded by an identifying letter unique to a specific ISD Block. (E.g., The Flowchart Manual pages for ISD Block I.2 go from A-1 to A-15 whereas for ISD Block I.3 the Flowchart Manual pages go from B-1 to B-15.) This same page numbering system is also used in the Job Aid Manuals.

HOW DO I USE THE JOB AID MANUAL AND WHAT ARE THE MAIN PARTS OF IT?

- It is unlikely that you will need to refer to every page in the Job Aid Manual. As previously stated, the Job Aid Manuals are used as supplements to the Flowchart Manuals that direct you to specific pages within the Job Aid Manuals. Therefore, DO NOT ATTEMPT TO USE THE JOB AID MANUALS INDEPENDENTLY OF THE FLOWCHART MANUALS.

- Scan through a few pages of your Job Aid Manual. Observe the following:

  — Partial flowcharts shown at the top of pages

  — Questions written in script that appear on most pages

  — Completed, or partially completed examples of Worksheets

WHAT IS THE PURPOSE OF THE PARTIAL FLOWCHARTS AT THE TOP OF SOME PAGES OF THE JOB AID MANUAL?

- When you are referred to the Job Aid Manual you will find a partial flowchart at the top of the Job Aid Manual page. You are to remain working with the Job Aid Manual until you come to another partial flowchart. Then return to the Flowchart Manual.

- The partial flowcharts are identical to those shown in the Flowchart Manual. They serve as an additional reminder of the activity being dealt with at the moment.

WHAT IS THE PURPOSE OF THE QUESTIONS WRITTEN IN SCRIPT THAT APPEAR ON SOME PAGES OF THE JOB AID MANUAL?

- The questions written in script are our way of telling you what follows. They highlight such things as:

  — The purpose of performing a certain activity

  — How the activity is performed

  — What sources are available for performing the activity and how good they are

  — What the Worksheet looks like after the activity is performed

WHAT IS THE PURPOSE OF THE COMPLETED OR PARTIALLY COMPLETED EXAMPLES OF WORKSHEETS?

- As previously stated, every Job Aid Manual uses one or more Worksheets (located in a pocket at the back of the Manual). The Worksheets permit you to produce (and document) the product called for in the ISD Block.

- Whenever you are required to make an entry on a Worksheet an example of that type of entry will be shown in the Job Aid Manual and will usually be circled so as to make it stand out. It is hoped that these examples will give you a clear idea of what is required on the Worksheet.

WHAT DOES THIS ALL MEAN AND WHAT DO I DO NOW?

- In this Introduction we have attempted to explain the following:
  - What Job Aids are
  - The classification system (ISD Phases and Blocks) used in the Job Aids
  - Sources of information used in the development of Job Aids
  - Job Aids presently available
  - A description of Flowchart Manuals
  - A description of Job Aid Manuals
- If you feel that you have an adequate understanding of the above, return to the Flowchart Manual now. You will be referred to specific pages in the Resource Manual (the remainder of this document) as you need the information contained in them. Do not attempt to read the Resource Manual now.

RETURN TO THE FLOWCHART MANUAL NOW

JOB AIDS RESOURCE MANUAL

HOW CAN THE RESOURCE MANUAL HELP ME?

The purpose of this resource manual is to assist you in the formation of a data-based system for decision making in the Analysis Phase of the Instructional Systems Development (ISD). In order to make logical and objective decisions based on conditions and needs in the field, you must collect, organize, analyze, and document job significant data (information). Such data includes many specifics under the broad categories of job background data, target population data, and critical task data. The specifications of specific data requirements and sources of this data should be part of the overall Job Analysis Plan.

WHAT ARE SOME SOURCES OF JOB SIGNIFICANT DATA?

There are many sources of data to support a job analysis.

These sources include such things as:

- Technical Manuals
- Field Manuals
- Army Regulations
- Circulars and Phamplets
- Programs of Instruction
- Soldier's Manuals
- Previous Task Lists
- Documentation from the Systems Engineering Era
- Reports from outside agencies, i.e., Army Research Institute, HumRRO, and other military and civilian research organizations
- Internal Research Reports
- Tables of Organization and Equipment and Tables of Distribution and Allowances
- Civilian Publications (technical journals and professional publications)
- Equipment Modification Work Orders
- CODAP (Comprehensive Occupational Data Analysis Programs)
- Field Surveys
- Panels of Experts

WHICH SOURCES OF DATA ARE INCLUDED IN THE RESOURCE MANUAL?

Each of the sources listed is useful for fulfilling specific needs in the Analysis Phase of ISD. The Job Analysis Plan should specify exactly which items of data will be needed and the recommended source(s) for each item. In this way all the data can be accessed and ready for use as soon as it is needed. The last three sources on the list, CODAP, Field Surveys, and Consensus Groups or Panels, are frequently cited in the Job Aids for specific items of information. How to use these sources is the subject of this manual.

CODAP

WHAT IS CODAP?

To provide personnel managers and training managers with the reliable job data needed for job and task analysis, the Deputy Chief of Staff for Personnel has selected the occupational survey questionnaire for data collection and CODAP (Comprehensive Occupational Data Analysis Programs) as the system for processing, reporting, and analyzing this data. The combination of questionnaire and CODAP is currently being used by all the U.S. Armed Forces to support their occupational survey and job analysis efforts. This automated data system provides information in such areas as: duties and tasks performed by job and duty incumbents; types of equipment, tools, and vehicles used and maintained; special skills and knowledge which must be met by job incumbents; quality and quantity of training received or required; physical and mental demands; and special items pertaining to personal and job background information, work environment, and job satisfaction.

WHEN SHOULD CODAP REPORTS BE USED?

Whenever data has already been prepared by CODAP it should be used in preference to school conducted surveys in order to prevent duplication of effort. CODAP has the capability of supplying all your data needs. It is the responsibility of each Army service school to initially provide the Army Occupational Survey Program with the input it must have to supply your job analysis needs, and also to develop a job analysis plan which allows sufficient time to access the necessary data.

Of particular use in job analysis are Group Summary Reports. The Job Aids suggest that you obtain these reports for documenting such information as: tasks performed in each duty position (ask for GPSUM6 report for your MOS), and percentage of soldiers in the skill level performing each task (ask for GPSUM 2).* Given sufficient lead time CODAP can also make up special reports to provide ratings on task selection factors such as, time to train OJE, consequences of inadequate performance, and probability of emergency performance (ask for FACSUM report).

HOW ARE CODAP REPORTS OBTAINED?

In order to obtain CODAP data you should first check with your supervisor to see if the information you need has already been accessed. If it has not, write to:

Commander
US Army Military Personnel Center
ATTN: DAPC-MSP-D
2641 Eisenhower Avenue
Alexandria, VA 22311

or call:

325-9272/9493 (AUTOVON 221-9272/9493).

Allow at least three weeks for the reports to arrive at your school. The necessary lead time could be much longer if you are requesting special information which CODAP has not yet collected. It is recommended that you obtain the two official guides from MILPERCEN: the US Army Military Occupational Data Bank, and the US Army Occupational Survey Program.

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*Keep in mind that these percentages are based on the peacetime conditions in which soldiers are presently being surveyed. Adjustments should be made for combat tasks.

FIELD SURVEYS

WHAT IS A FORMAL FIELD SURVEY?

A formal field survey is similar to the type of questionnaire survey conducted by the Army Occupational Survey Program, only it is conducted by instructional development personnel within an Army service school.

The use of questionnaires permits the job analysis team to make limited contact with large numbers of personnel; thus large amounts of information can be collected at a relatively low cost. Questionnaires can be mailed to personnel who are asked to complete and return them, or they can be administered to groups of job incumbents and/or supervisors by local personnel who have the responsibility and authority to make sure all questionnaires are completed and returned.

WHEN SHOULD FORMAL FIELD SURVEYS BE USED?

Whenever time does not allow you to access information from the Army Occupational Survey Program, an alternate data collection method may be used. Formal field surveys are suggested as an alternate data source in the ISD Job Aids. Should you decide to conduct a formal field survey be sure to obtain permission from MILPERCEN in accordance with the guidelines in AR 600-46.

HOW IS A FIELD SURVEY QUESTIONNAIRE DESIGNED?

- **Types of Questionnaires**

There are two types of questionnaires, the closed form and the open form. We suggest using the closed form, which contains a list of possible items to be selected or blanks to be filled in with words or numbers. (For an example of a closed form questionnaire, see Appendix A.) This form has several advantages over the other alternative, the open form. It is likely to take a minimum amount of time to fill out, thus increasing the chances that it will be completed and returned. The process of tabulating and summarizing responses is simpler and less time consuming than with an open form questionnaire. Machine tabulation and computer analysis of the completed forms are practical when a large number of questionnaires is used.

A properly designed closed form questionnaire is difficult to prepare. The designer must be sure to include all possible responses expected from any of the soldiers who will complete the questionnaire. The items must be constructed on the form so that they clearly communicate to the user exactly what the designer is trying to ask. The greatest single problem with research methods is improperly worded questionnaires, as they produce faulty data. If you intend to design your own questionnaires we suggest consulting the following guides:

Morsh, J.E. and Archer, W.B. *Procedural guide for conducting occupational surveys in the United States Air Force* (PRL-TR-67-11). Lackland Air Force Base, Texas: Personnel Research Laboratory, Aerospace Medical Division, Air Force Systems Command, September 1967.

Jacobs, T.O. *Developing questionnaire items: how to do it well.* Human Resources Research Organization (HumRRO), 300 North Washington Street, Alexandria, Virginia 22314.

WHAT SHOULD BE INCLUDED ON THE QUESTIONNAIRE?

The details of the forms you use will be determined by:

1. how you will tabulate and summarize the results, and
2. what information you wish to collect.

How you will tabulate and summarize results will be determined by whether you have available a computer and other automated data handling equipment and by the number of people surveyed. To determine what information you wish to collect, you should consider the total data requirement for the training development process. These data requirements should be predetermined in the job analysis plan so that as much information as possible can be obtained in a single questionnaire survey effort.

One note of caution about the design of your questionnaire is that you should keep the questionnaire as short as practical. In general, the forms should be designed so they can be completed in two hours or less. One way you can save time on a complex task inventory is to list all tasks under their appropriate duty position title. This will permit the soldier to rapidly scan groups of tasks not performed and then proceed to the next duty position.

WHAT TYPE OF INSTRUCTIONS FOR COMPLETING AND ADMINISTERING THE QUESTIONNAIRES SHOULD BE PREPARED?

After the formal field survey questionnaires have been written, the instructions for completing and administering the questionnaires should be prepared. These instructions should include:

- For the user — an introduction explaining the purpose and importance of participating in the field survey.
  — general instructions explaining how the questionnaire is to be completed.
- For the project officer — general instructions regarding responsibilities.
  (When questionnaire is not self-administered) — specific instructions for administering the questionnaire in a controlled environment.

For examples of these types of instructions, see Appendix B.

HOW IS A SURVEY SAMPLE SELECTED?

You are now ready to select organizations and individuals to provide you with the needed job data. The complexity of the MOS, the availability and quality of published sources of job information, and the number of people in the particular job will determine how much and what kinds of information you need to collect. This will strongly influence the make-up and size of your sample. If the complexity and amount of required data are great, the number of organizations and individuals interviewed will increase. As a general rule, your survey sample should be as large as possible. This is particularly true if you do not have personnel available with the responsibility and authority to assure that most of your questionnaires will be completed. You should make an attempt to obtain a sample that represents the distribution of individuals in the MOS according to command and skill level. Review of personnel records, either by personnel employees, members of your job analysis team, or your field representatives who will conduct the survey will be required to obtain data upon which to base choices for your survey.

- In selecting UNITS for sampling, you should select units that:
    1. have at least a small number of job holders and supervisors who do the particular job to be analyzed. Preferably, you should choose some units that have a relatively small number of job holders, and some that have large numbers.
    2. are geographically and environmentally representative.
- In selecting INDIVIDUALS within the units, you should select a group made up of individuals who:
    1. perform and supervise the job being analyzed
    2. perform with average satisfactory proficiency
    3. are representative in terms of length of time on the job
    4. are representative in terms of training.

For certain types of information you will also want to choose at least a few job holders or supervisors who are acknowledged experts at the job.

HOW IS A QUESTIONNAIRE SURVEY CONDUCTED?

- **Trial Run (Validation of Instruments)**

Before sending out the total number of questionnaires you intend using, you may wish to send out a small number. This will permit you to check the initial results and possibly make some changes in your questionnaires or instructions. Then you will send out what you hope will be the total number of questionnaires required.

- **Group Administration**

The ideal way to administer questionnaires is group administration. Where the local responsible official and his assistants schedule the administration he should do the following:

— Make certain that only eligible individuals are seated in the administration area

— Read the administrative instructions

— Provide any necessary assistance in completing the questionnaires

— Return the completed questionnaires to the school

- **Individual Administration**

Often, particularly with individuals at remote stations, group administration is impractical. In these cases, it is sometimes effective to send the questionnaires to a responsible officer and request that they be returned by a reasonable suspense date. Careful attention should be paid to the instructions for administration or self-administration. If your command has no authority to require that a suspense date be met, then you must either obtain the concurrence of a command with that authority, or be willing to accept a reduced percentage return.

- **Return of Questionnaires**

How much confidence can you have in the validity of your questionnaire if you get less than a 100 percent return? Less and less confidence can be expected with each reduction in the percentage returned. What can you do if you are not satisfied with the percentage of returns of the questionnaires? We suggest you try the following:

1) Send out more forms to different people and hope for better results.
2) Recontact some of the first sample and try to encourage them to return the questionnaires.
3) Visit a random sample of those who did not respond and compare their forced responses with the voluntary responses. Then you and your supervisors will have to decide how much chance you are willing to take that the data you have received presents a sufficiently accurate picture of the job as it really exists.

PANELS

WHAT IS A PANEL OF EXPERTS?

With this method a group of personnel, selected for their experience and knowledge of the job, is brought together to confer about the required job analysis data. Panels may be made up of one or more of the following types of members:

1) Subject Matter Experts (SMEs)

These are personnel found at your school who are acknowledged experts in the tasks, duty positions or MOS you are analyzing. They may be found among instructors or ISD personnel who hold the MOS. SMEs may or may not have had recent field experience.

2) Job Incumbents

This group includes those who are presently holding the jobs/performing the tasks/ you are interested in, or who have recently held the jobs. The more recent the better. More than three years away from the field would disqualify a potential panel member.

3) Job Supervisors

This group includes those who are presently or have recently (within the past three years) supervised soldiers in the jobs/tasks you are interested in.

Job incumbents and job supervisors may be found on the post where your school is located or at other locations. Check the TOEs and TOAs to find out where personnel may be assigned. While personnel assigned to your post are most conveniently assembled, they may not be completely representative of job incumbents/supervisors serving in other locations. Also, they probably have been heavily burdened by school surveys, panels, etc., already due to their proximity to the school. Therefore, personnel from other locations may have to be used.

WHEN IS A PANEL USED?

Panels of experts are a good alternate data source when:

- CODAP is not available
- time and funds are inadequate for conducting a field survey
- the type of information required can be reliably provided by a small group

WHEN ARE SUBJECT MATTER EXPERTS USED?

With this method, a group of highly experienced personnel is brought together to record and organize the required job analysis data. This method is particularly useful in collecting job data on new jobs or on managerial and supervisory jobs where many of the most critical behaviors are not directly observable. Since the members of a panel of SMEs are experts in the MOS being analyzed, their collective effort should be decisions about the requirements of the job. In general, their greatest effectiveness is in evaluating and making decisions about job data that have been collected from other sources by other means.

WHEN ARE RECENT JOB INCUMBENTS AND/OR SUPERVISORS USED?

With this method, a group of job incumbents, job supervisors, or a combination of these, is brought together to provide information about their jobs. The primary function of this type of panel is to provide information about their jobs, not to make decisions. Another name for this type of panel is Consensus Group.

HOW IS A PANEL ASSEMBLED?

The panel is a relatively inexpensive and easy approach to collecting data. Three to seven persons is the number recommended to make up the panel. Whenever possible, you want panel members to be representative of different locations and types of units in the field. While many experts may be available within your school it is critical that their views be balanced by those of persons serving presently or recently in the field. If all of the panel members come from schools, there may be a tendency for the outcome to reflect what exists in training rather than what actually exists on the job.

Appendix A

EXAMPLE OF A CLOSED FORM QUESTIONNAIRE

JOB INVENTORY (DUTY-TASK LIST)	AFSC 921X0/922X0	Page 7 of 46 Pages

1. Check tasks you perform now (✓).
2. Add any tasks you do now which are not listed.
3. In the "Time Spent" column, rate checked (✓) tasks on time spent in your present job.

Time Spent Scale

1 - VERY MUCH BELOW AVERAGE
2 - BELOW AVERAGE
3 - SLIGHTLY BELOW AVERAGE
4 - ABOUT AVERAGE
5 - SLIGHTLY ABOVE AVERAGE
6 - ABOVE AVERAGE
7 - VERY MUCH ABOVE AVERAGE

C. FITTING AND MAINTAINING LIFE RAFTS AND PRESERVERS		✓ CHECK IF DONE IN PRESENT JOB	TIME SPENT DOING THESE TASKS IN PRESENT JOB
1. Clean life preservers	42		
2. Clean life rafts	43		
3. Condemn non-repairable life rafts or life preservers	44		
4. Fit life preservers	45		
5. Inspect life preservers	46		
6. Inspect life raft accessories	47		
7. Inspect life rafts	48		
8. Inspect or weight test carbon dioxide (CO_2) cylinders or cartridges	49		
9. Make entries on or review Life Preserver Data forms (AFTO Form 468)	50		
10. Make entries on or review Life Preserver Inspection Data Record forms (AFTO Form 336)	51		
• • • • • • • • • •			
11. Make entries on or review Life Raft Inspection Record forms (AFTO Form 337)	52		
12. Make entries on or review User Certification Label forms (AFTO Form 27)	53		
13. Pack life preservers	54		
14. Pack life raft accessory containers	55		
15. Pack life rafts	56		
16. Perform functional tests of life preservers	57		
17. Perform functional tests of life rafts	58		
18. Perform inflation tests of life preservers	59		
19. Perform inflation tests of life rafts	60		
20. Perform minor repairs to life preservers such as patching rips, tears, or holes	61		
• • • • • • • • • •			
(Continued next page)			

JOB INVENTORY (DUTY-TASK LIST)	AFSC 921X0/922X0	Page 8 of 46 Pages

1. Check tasks you perform now (✓).
2. Add any tasks you do now which are not listed.
3. In the "Time Spent" column, rate checked (✓) tasks on time spent in your present job.

Time Spent Scale

1 - VERY MUCH BELOW AVERAGE
2 - BELOW AVERAGE
3 - SLIGHTLY BELOW AVERAGE
4 - ABOUT AVERAGE
5 - SLIGHTLY ABOVE AVERAGE
6 - ABOVE AVERAGE
7 - VERY MUCH ABOVE AVERAGE

C. FITTING AND MAINTAINING LIFE RAFTS AND PRESERVERS (CONTINUED)		✓ CHECK IF DONE IN PRESENT JOB	TIME SPENT DOING THESE TASKS IN PRESENT JOB
21. Refill CO_2 cylinders	62		
22. Send life raft compressed gas cylinders to other agencies for test, refill, or inspection	63		
23. Store life rafts or life preservers	64		
IF A TASK THAT YOU PERFORM IS NOT LISTED ANYWHERE IN THE ENTIRE LIST, WRITE IT IN THE BLANK SPACES BELOW.			

Appendix B

ADMINISTRATIVE PROCEDURES FOR CLOSED FORM QUESTIONNAIRE

1. Introduction (for user of questionnaire)
2. General Instructions (for user of questionnaire)
3. General Instructions (for project officer)
4. Specific Instructions for Administering Questionnaire (for project officer when questionnaire is administered in a controlled environment.

TO: USER OF QUESTIONNAIRE

INTRODUCTION

TO THE NONCOMMISSIONED OFFICER:

This questionnaire is part of a field survey designed to identify tasks for military police training. Its specific purpose is to obtain from you, the Noncommissioned Officer, information on task criticality and frequency of performance. Feedback gained from this questionnaire will play a major part in redesigning the Noncommissioned Officer Advanced Education System. The ultimate goal is to design training so that it reflects what we have learned from you in the field. This goal is possible only with your full cooperation. Consider each task listed in this questionnaire carefully and give your best response. Your contribution is essential to a successful survey.

TO: USER OF QUESTIONNAIRE

GENERAL INSTRUCTIONS

1. Complete this survey questionnaire within the time specified by your unit project officer and return it to him upon completion.

2. Because instructions for completing each part of this survey questionnaire are different, read all instructions carefully.

3. Part II requires that you supply biographical information. This information will be used to correlate feedback received from the field. Print all answers in the spaces provided on the appropriate survey questionnaire page.

4. In the upper right corner of each page of Part III, Task Inventory, of this survey questionnaire is a BOOKLET NUMBER block. Immediately to the left of this block is the individual booklet number. Print the individual booklet number in the BOOKLET NUMBER block on each page of the Task Inventory as demonstrated in the example.

EXAMPLE:

(000345)

	BOOKLET NUMBER									
	0	1	2	●	4	5	6	7	8	9
	0	1	2	3	●	5	6	7	8	9
	0	1	2	3	4	●	6	7	8	9

5. Part III, Task Inventory, is divided into nine (9) separate sections (Sections I-IX). The content of these sections concerns tasks you may perform in your present duty assignment. You are asked to rate each task in accordance with three criteria - frequency of task performance, immediacy of task performance, and importance of task to mission success.

   Base all selections on your experience in your present duty assignment.

   a. Column A requires that you rate how often you perform each task on a scale from one to four. The criterion for this rating is the frequency of task performance. Those tasks performed most frequently will normally be rated four while those tasks not performed at all will be rated one.

b. Column B requires that you determine how soon you must be capable of performing each task after reporting to your present duty assignment. The criterion for this rating is the immediacy of task performance. Of the four possible responses, select the one most nearly describing your requirements. Select response number four for those tasks which you must be capable of performing immediately upon reporting for duty. Select response number one for those tasks which you never perform.

c. Column C requires that you describe, in your opinion, how important each task is to mission success. The criterion for this rating is the importance of the task to the accomplishment of the unit mission. Those tasks that, in your opinion, are most important to mission success will be rated four while those tasks that you consider least important will be rated one.

6. After selecting, enter your responses for each task, using either a pen or pencil, in the answer portion adjacent to the appropriate task statement as demonstrated in the example.

EXAMPLE: The task PREPARE CORRESPONDENCE, if rated as performed FREQUENTLY in Column A, identified as must be capable of performing IMMEDIATELY in Column B, and determined by you to be MOST IMPORTANT in Column C, would be entered in the answer portion, as shown below.

PREPARE CORRESPONDENCE	1	2	3	4	1	2	3	4	1	2	3	4
	☐	☐	☐	■	☐	☐	☐	■	☐	☐	☐	■

7. After each section of Part III, Task Inventory, is a Write-In Section. These write-in sections are provided in order that you may comment on each task inventory section, or list any task(s) you think should be included in the Task Inventory. These sections also allow you to comment on those tasks that you find are the most difficult for you to perform.

TO: PROJECT OFFICER

GENERAL INSTRUCTIONS FOR PROJECT OFFICER

1. General. The Military Police School is currently involved in redesigning basic military police training to produce military policemen better equipped to perform when they reach the unit. The emphasis is toward training replacements in tasks actually being performed in the field. The questionnaires in this packet are designed to identify those tasks.

   The care with which you, the project officer, administer the questionnaires will determine the accuracy of field feedback and, consequently, the success or failure of this project.

2. Survey Packet Contents.
   a. Questionnaire
   b. Supervisor Questionnaire
   c. Project Officer Instructions
   d. Answer Sheets for Questionnaire
   e. Pencils for use on answer sheets.

3. Responsibilities.
   a. Unit Commander. The unit commander is requested to appoint a project officer and to monitor administration of the survey.
   b. Project Officer. The project officer is responsible for the control and handling of questionnaires, for the administration of the questionnaires, and for returning completed and unused questionnaires to the Military Police School.
   c. Questionnaire Administrator. The project officer may appoint someone to administer the questionnaire, if necessary. Normally, however, it is recommended that the project officer administer the questionnaire himself.

4. About the Questionnaires.
   a. Questionnaire. This questionnaire is designed to identify tasks being performed by military policemen in the field and the frequency with which each task is performed.
   b. Supervisor Questionnaire. The supervisor questionnaire is programmed to provide feedback on task criticality, probability of deficient performance, and the frequency with which each task is performed.

5. Who Takes The Questionnaire. The project officer is responsible for selecting individuals to take the questionnaires (respondents) within their units. Those selected must meet the requirements listed below:

   a. The questionnaire respondent must:

      (1) Be in an M.P. duty assignment (actually performing M.P. duties)

      (2) Have been on the job at least 90 days

   b. The respondent to the Supervisor Questionnaire must:

      (1) Command or supervise M.P. personnel

      (2) Have been in a command or supervisory position in the unit for 90 days. (Assign questionnaires proportionately among officers and NCO's.)

6. Questionnaire Administration.

   a. Questionnaire. The questionnaire will be administered in a controlled environment. Persons participating in the survey will be allowed two hours to complete the questionnaire and will turn the questionnaire and answer sheets in to the questionnaire administrator prior to leaving the survey area. Individual questionnaires and their accompanying answer sheets will be kept together.

   See attached item for the procedure to be followed in administering the questionnaire.

   b. Supervisor Questionnaire. Supervisors selected as respondents for this questionnaire will be allowed to sign for the questionnaire and take it with them. They will complete the questionnaire and return it to the project officer within a time frame he specifies. This time frame must be compatible with the suspense date to the Military Police School.

7. Questionnaire Handling. Questionnaires and answer sheets become FOR OFFICIAL USE ONLY when completed. For ease of accounting, each questionnaire and its accompanying answer sheets are numbered. All questionnaires must be returned to the Military Police School whether they are used or not. Instructions for returning the questionnaires to the Military Police School are contained in the basic letter. If you have any problems or questions, contact (NOTE: Give name or names, address, and telephone number).

TO: PROJECT OFFICER ADMINISTERING QUESTIONNAIRE IN A CONTROLLED ENVIRONMENT

ADMINISTERING THE QUESTIONNAIRE

A-1. Preparation. A classroom or training room equipped with desks will provide the most ideal site for administering the questionnaire. Questionnaires, answer sheets, and two electrographic pencils should be issued to participants after everyone who is to take the questionnaire has arrived. This ensures that everyone starts together.

A-2. Instructions. The questionnaire administrator will present the following instructions.

a. "Is there anyone here who is not working in an M.P. duty position? Is there anyone here who has not been assigned to their present duties at least 90 days? If so, please leave at this time."

b. "Will everyone at this time please read the first page in the questionnaire which has been issued to you."

(Note to the administrator: It must be emphasized that your enthusiasm for this project or lack of it will be contagious. It is important that you demonstrate a positive attitude to the participants. Allow time for the first page to be read and underline the importance of the questionnaire with the following statement.)

"I would like to stress the importance of this questionnaire. The Military Police School wants to design training to fit the job in the field. You are the only people who can tell them what they need to know. Please think through each question and give your best answers."

c. "Turn to Part I, Biographical Information, and answer questions 1-13. When you have finished, lay your pencil on the desk so I will know when to proceed to the next step."

d. "Now read the instructions found in Part II."

(Note to the administrator: Allow reasonable time for everyone to finish before moving to the next step.)

"Are there any questions?"

e. "As you read in the instructions, there are nine answer sheets accompanying your questionnaire. Take the answer sheets and number them one through nine to correspond to the first nine sections in Part III of the questionnaire. If you do not have nine answer sheets, raise your hand—I have extra ones. Use a separate answer sheet for each section. Answer only the number of questions listed in each and move to the next section and answer sheet. It is not necessary to write your name, rank, the date, or course at the top of the answer sheet. Also, disregard the blocks marked score, grade, extra points, and social security number."

f. "Because of the size of this survey, these answer sheets will be read by machine. You must use the special pencils provided so that the machine can read the answers. When marking your answer, take care to fill the vertical rectangle outlining the letter as shown by the example on page 4 of the instructions. Also, please be sure not to make any stray marks on the answer sheets. Finally, do not fold the answer sheets."

g. "All answers must be based on your experience in this your present unit. Do not call on experience in previous units. This means that if you do not perform a particular task in your present unit, you must mark 'do not perform this task' on your answer sheet."

h. "You may begin answering Part III. Remember Section ten, the written section. When you finish answering all questions, insert your answer sheets into the questionnaire and turn them in to me. You may leave when you are finished. Are there any questions?"

A-3. Conclusion. After everyone has taken the questionnaire, ensure that all questionnaires and answer sheets are accounted for. Collect the pencils provided so that they may be returned to the Military Police School along with the questionnaires and answer sheets.

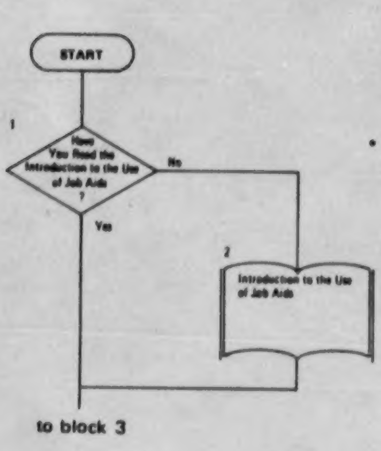
JOB AID FOR
SPECIFYING LEARNING EVENTS/ACTIVITIES

ISD III.1

Manual

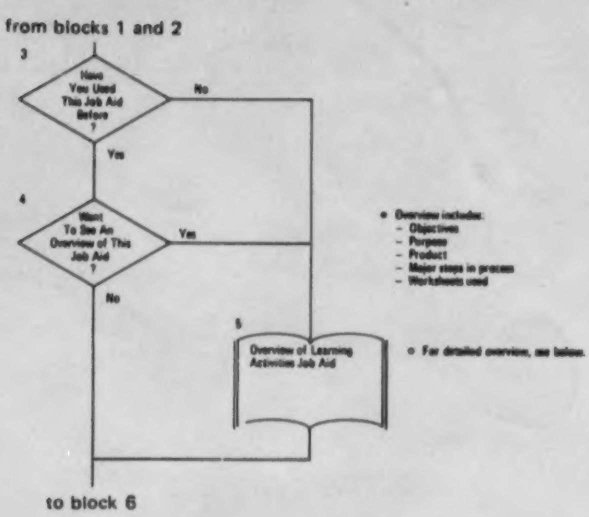
This is the 9th in a series of ISD Job Aids for use in instructional design and development. This volume is to be used as a supplement to the primary document, "Job Aids: Descriptive Authoring Flowcharts ISD III.1 Specify Learning Events/ Activities." The flowchart document will direct you to specific guidance, examples, and references provided in this volume. If you do not have the primary flowchart document, request it from your supervisor.

The wording in this manual should not be construed to discriminate between the sexes. In order to avoid a repetitious use of the terminology, "he/she," the terms, "he," "him," and "his," as well as "men," are intended to include both the masculine and feminine gender. Any exceptions to this usage will be so noted.


START
1
Have You Read the Introduction to the Use of Job Aids ?
No
Yes
2
Introduction to the Use of Job Aids
to block 3

- This introduction provides the user with instruction on the basic structure of the Job Aids and Guidance for their use

- Refer to Introduction


from blocks 1 and 2
3
Have You Used This Job Aid Before ?
No
Yes
4
Want To See An Overview of This Job Aid ?
Yes
No
5
Overview of Learning Activities Job Aid
to block 6

- Overview includes:
  - Objectives
  - Purpose
  - Product
  - Major steps in process
  - Worksheets used

- For detailed overview, see below.

What is the Learning Activities Job Aid All About?

- **OBJECTIVE**

  1. Given a list of tasks selected for training, and a list of learning objectives for the task elements/enabling skills and knowledges for each task select the most appropriate learning activities for training the learning objectives.

  2. Given an appropriate worksheet (Learning Activities Recording Sheet), and instructions on how to fill it out correctly, fill out a worksheet for each critical task.

- **PURPOSE**

  The purpose of this job aid is to help you select appropriate learning events and activities for training sessions in which critical tasks will be taught. Learning research has identified learning activities and conditions which are essential for teaching different kinds of learning objectives. In this job aid, you will learn what those activities and conditions are.

- **PRODUCT**

  This Job Aid will result in a listing of learning activities for teaching the learning objectives for each critical task.

• DESCRIPTIVE FLOWCHART

The flowchart on pages I-43 thru I-44 shows the major steps in the use of the Job Aid for specifying Learning Activities for all learning objectives in critical tasks. The flowchart will be useful to you in getting a clear picture of the overall process used in this job aid. A more completely described flowchart is provided in Job Aids: Descriptive Authoring Flowcharts.

• OVERVIEW OF MAJOR STEPS IN SPECIFYING LEARNING ACTIVITIES

The following major steps are performed for each critical task element/enabling skills and knowledges that is to be included in training: (i.e., those for which there is a Learning Objective.)

Step 1. The learning category (Mental, Physical, or Attitudinal) is identified and recorded for each Learning Objective.

Step 2. The learning subcategory is identified and recorded for each Learning Objective.

Step 3. Based on the learning category and subcategory, appropriate learning activities for teaching each Learning Objective are specified and recorded.

• WORKSHEET USED

— The Table on the next page shows a sample of a completed Learning Activities Recording Sheet (LAR).

EXAMPLE:

ISD III.1 Specify Learning Events/Activities

LEARNING ACTIVITIES RECORDING SHEET

(LAR Sheet)

SECTION I

Name/Office Symbol SFC Robert A. Fisher (ITAD) Date 11/21/78

Course Land Navigation Skills MOS/Skill Level 52P20

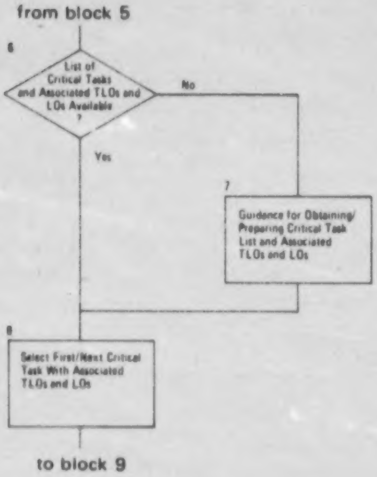
SECTION II

Task ID No. 071-11A-0502

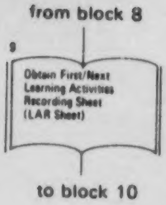
Terminal Learning Objective (Action Statement Only) Move under direct fire

SECTION III

(A) Learning Objective (Action Statement Only)	(B) Learning Category/Sub Category	(C) Appropriate Learning Activities
0502-A.1 Select next position	MENTAL decision-making	1. Demonstration by the instructor of the following procedural steps for determining the one best position to move to in a combat situation: (a) identification of decision needed -- choice of next position (b) collection of relevant data on terrain, distance, visibility, position of aggressor sniper, etc. (c) identification of a least 2 alternative field positions (d) selection of the best position to move to 2. Present trainee with a number of situations in which he has to choose the next position to which to move. Ask trainee to make a choice by applying the procedural steps which were demonstrated by the instructor. Tell trainee at once whether his choices were good or poor. Give reasons. 3. Let trainee practice process of choosing positions and receiving feedback on his choices until trainee can select good positions consistently, within a stated time limit.
0502-A.2 Select movement technique	MENTAL decision-making	1. Demonstration by the instructor of the following: (a) identification of decision needed -- what movement technique to use (b) collection of relevant data on terrain, cover, visibility, location of sniper, speed required, etc. (c) identification of alternative movement techniques -- high crawl, low crawl, rush, etc. (d) evaluation of each technique taking into account the relevant data (e) selection of one technique as the most suitable for the situation 2. Describe a number of situations requiring movement under fire. Ask the trainee to specify the best technique for movement in each situation. Tell trainee at once whether his choices of movement were good or poor. Give reasons. 3. Repeat step 2 until the trainee consistently makes good choices of movement techniques.
0502-A.3 Move to next position	PHYSICAL gross motor skill	1. Demonstration by instructor of the low crawl, high crawl, and rush movement techniques. Demonstration of how cover can be used to avoid being sniped. 2. Let trainee practice performing each movement technique. Trainee will receive feedback on his performance by observing whether or not he is hit by a simulated enemy sniper using rubber bullets. 3. Let trainee practice performing each movement technique under simulated fire until he can consistently get to next position without being hit.
0502-B.1 Accepting the need to take risks when necessary to protect the lives of squadmates	ATTITUDINAL attitude-learning	1. Provide trainee with reasons for taking risks when necessary to protect the lives of squadmates. 2. Tell trainee of experiences in which correct attitudes toward taking acceptable risks saved lives. Give examples of both acceptable and unacceptable risks. 3. Let trainee discuss the examples of acceptable and unacceptable risks and allow him to provide his own example of each type of risk. Provide trainee with immediate feedback.


from block 5
6
List of Critical Tasks and Associated TLOs and LOs Available ?
No
Yes
7
Guidance for Obtaining/ Preparing Critical Task List and Associated TLOs and LOs
8
Select First/Next Critical Task With Associated TLOs and LOs
to block 9

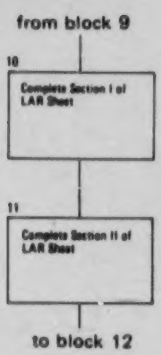
- List of critical tasks and associated Terminal Learning Objectives and Learning Objectives should be available as output from ISD II.1 Develop Objectives.
- If Learning Objectives are not available for all critical tasks, go to Job Aids: Descriptive Authoring Flowcharts ISD II.1 Develop Objectives.
- When Learning Objectives have been obtained return to Block 6.


from block 8
9
Obtain First/Next Learning Activities Recording Sheet (LAR Sheet)
to block 10

- Learning Objectives for each critical task are classified by learning category and sub-category. Appropriate learning activities are then specified for each Learning Objective. The Learning Activities Recording Sheets (LAR) are used to record these data.
- For guidance in obtaining LAR Sheets, see below.

Where do I get Learning Activities Recording Sheets (LAR)?

- A Learning Activities Recording Sheet (LAR) is available for duplication in the pocket at the end of this manual.
- To see a sample of a completed LAR Sheet refer to page I-6.

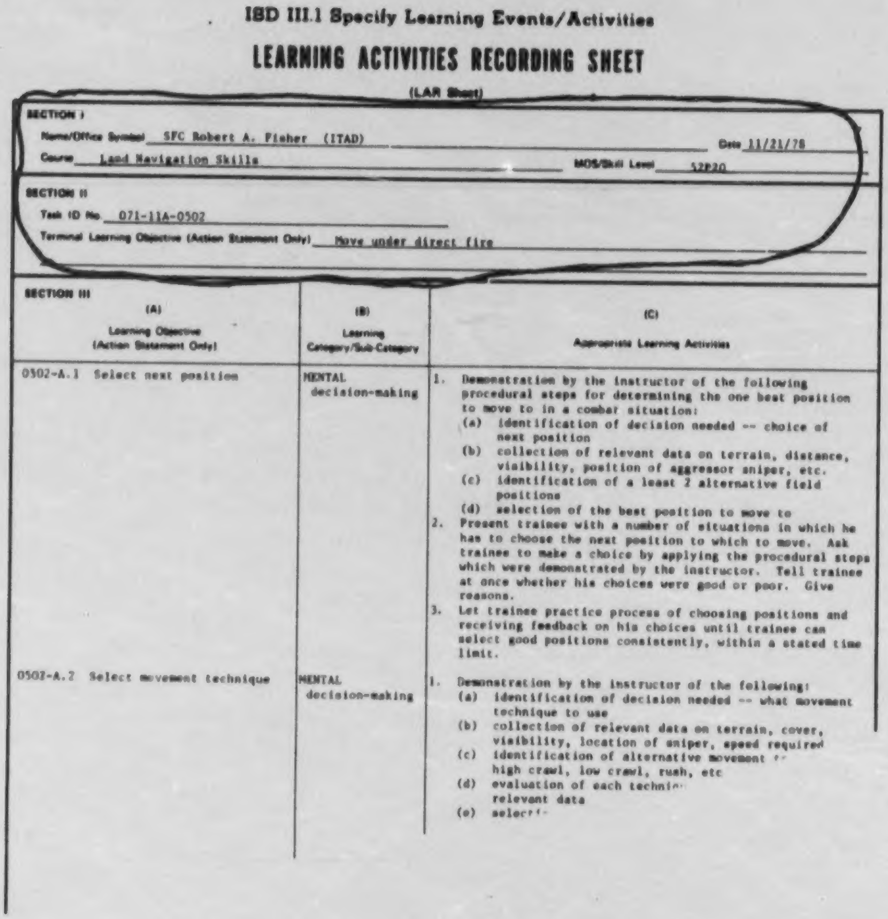

from block 9
10
Complete Section I of LAR Sheet
11
Complete Section II of LAR Sheet
to block 12

- Information required in Section I of the LAR Sheet is:
  - Name/Office Symbol
  - Date
  - Course under development
  - MOS/Skill Level
- Example: See below.

- Information required in Section II of the LAR Sheet is:
  - Task ID No.
  - Terminal Learning Objective (Action Statement Only)
- Example: See below.

What Does the Learning Activities Recording Sheet (LAR) Look Like When Section I and II Have Been Completed?

EXAMPLE:



ISD III.1 Specify Learning Events/Activities

LEARNING ACTIVITIES RECORDING SHEET

(LAR Sheet)

SECTION I

Name/Office Symbol SFC Robert A. Fisher (ITAD) Date 11/21/78

Course Land Navigation Skills MOS/Skill Level 52P20

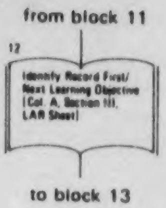
SECTION II

Task ID No. 071-11A-0502

Terminal Learning Objective (Action Statement Only) Move under direct fire

SECTION III

(A) Learning Objective (Action Statement Only)	(B) Learning Category/Sub-Category	(C) Appropriate Learning Activities
0502-A.1 Select next position	MENTAL decision-making	1. Demonstration by the instructor of the following procedural steps for determining the one best position to move to in a combat situation: (a) identification of decision needed -- choice of next position (b) collection of relevant data on terrain, distance, visibility, position of aggressor sniper, etc. (c) identification of a least 2 alternative field positions (d) selection of the best position to move to 2. Present trainee with a number of situations in which he has to choose the next position to which to move. Ask trainee to make a choice by applying the procedural steps which were demonstrated by the instructor. Tell trainee at once whether his choices were good or poor. Give reasons. 3. Let trainee practice process of choosing positions and receiving feedback on his choices until trainee can select good positions consistently, within a stated time limit.
0502-A.2 Select movement technique	MENTAL decision-making	1. Demonstration by the instructor of the following: (a) identification of decision needed -- what movement technique to use (b) collection of relevant data on terrain, cover, visibility, location of sniper, speed required (c) identification of alternative movement high crawl, low crawl, rush, etc (d) evaluation of each techni relevant data (e) selec


from block 11
12
Identify Record First/ Next Learning Objective (Col. A, Section III, LAR Sheet)
to block 13

- The action statement for each learning objective associated with the critical task is recorded on the LAR Sheet.
- For further guidance, see below

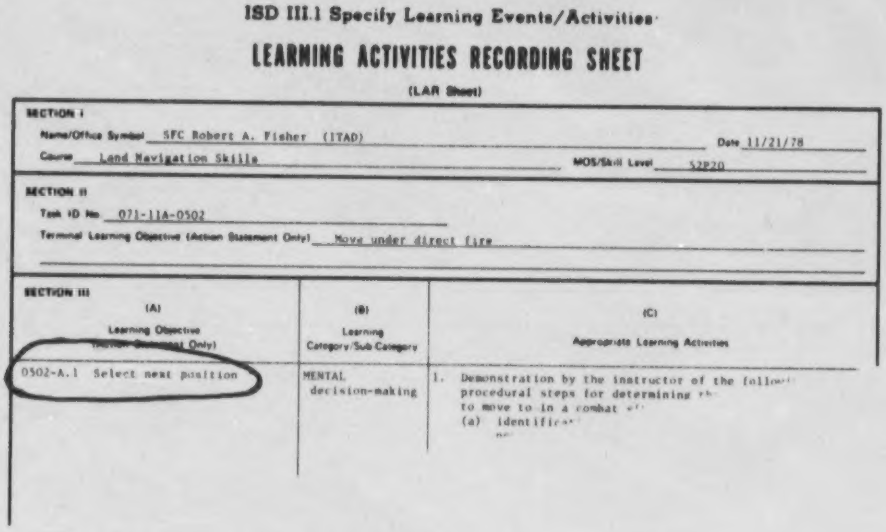
How do I Identify and Record the First/Next Learning Objective (LO) for This Critical Task?

This block represents the first step in the completion of Section III of this LAR Sheet. Perform the following:

(1) Examine the LOs associated with this critical task.
(2) Identify the first/next LO.
(3) In Column A of the LAR Sheet, record only the action statement for the first/next LO.

What Does the LAR Sheet Look Like After the First/Next Learning Objective Action Statement Has Been Recorded?

EXAMPLE:



ISD III.1 Specify Learning Events/Activities

LEARNING ACTIVITIES RECORDING SHEET

(LAR Sheet)

SECTION I

Name/Office Symbol SFC Robert A. Fisher (ITAD) Date 11/21/78

Course Land Navigation Skills MOS/Skill Level 52P20

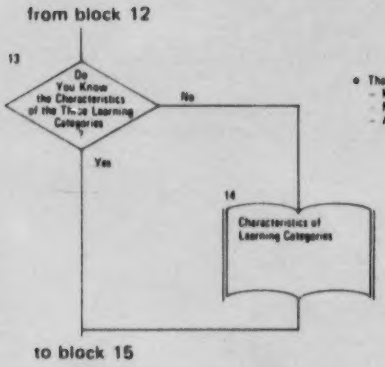
SECTION II

Task ID No 071-11A-0502

Terminal Learning Objective (Action Statement Only) Move under direct fire

SECTION III

(A) Learning Objective (Action Statement Only)	(B) Learning Category/Sub Category	(C) Appropriate Learning Activities
0502-A.1 Select next position	MENTAL decision-making	1. Demonstration by the instructor of the follo procedural steps for determining th to move to in a combat (a) identific ne


from block 12
13
Do You Know the Characteristics of the Three Learning Categories ?
No
Yes
14
Characteristics of Learning Categories
to block 15

- The three learning categories are
  - Mental
  - Physical
  - Attitudinal

- To determine the characteristics of each of the three learning categories, see below.

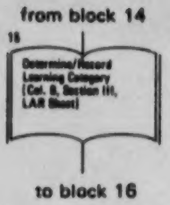
What are the Characteristics of the Three Learning Categories?

All Learning Objectives fall into one of three learning categories—MENTAL, PHYSICAL, or ATTITUDINAL. The characteristics of each of these categories are:

MENTAL: The learning required for learning objectives categorized as "mental" is mainly intellectual, involving the mind. Learning how to make decisions, memorizing of information, are examples of chiefly mental learning tasks.

PHYSICAL: Learning of objectives categorized as "physical" involves much use of parts of the body for accomplishment. Mental processes are always involved, but the emphasis is on skill in use of the body. Learning to use a tool or to play a sport are examples of learning tasks which would be classified as physical.

ATTUDINAL: Typically, learning objectives categorized as "attitudinal" involve learning to choose to perform one type of behavior instead of another, less-desirable kind. Learning to obey orders, or to observe safety regulations are learning tasks that would fall into the attitudinal category.


from block 14
15
Determine/Record Learning Category (Col. B, Section III, LAR Sheet)
to block 16

- One of the following three learning categories is recorded in Col. B of the LAR Sheet:
  - MENTAL
  - PHYSICAL
  - ATTITUDINAL
- For further guidance in determining and recording appropriate learning category, see below.

How do I Determine the Learning Category That Should be Assigned to This Learning Objective?

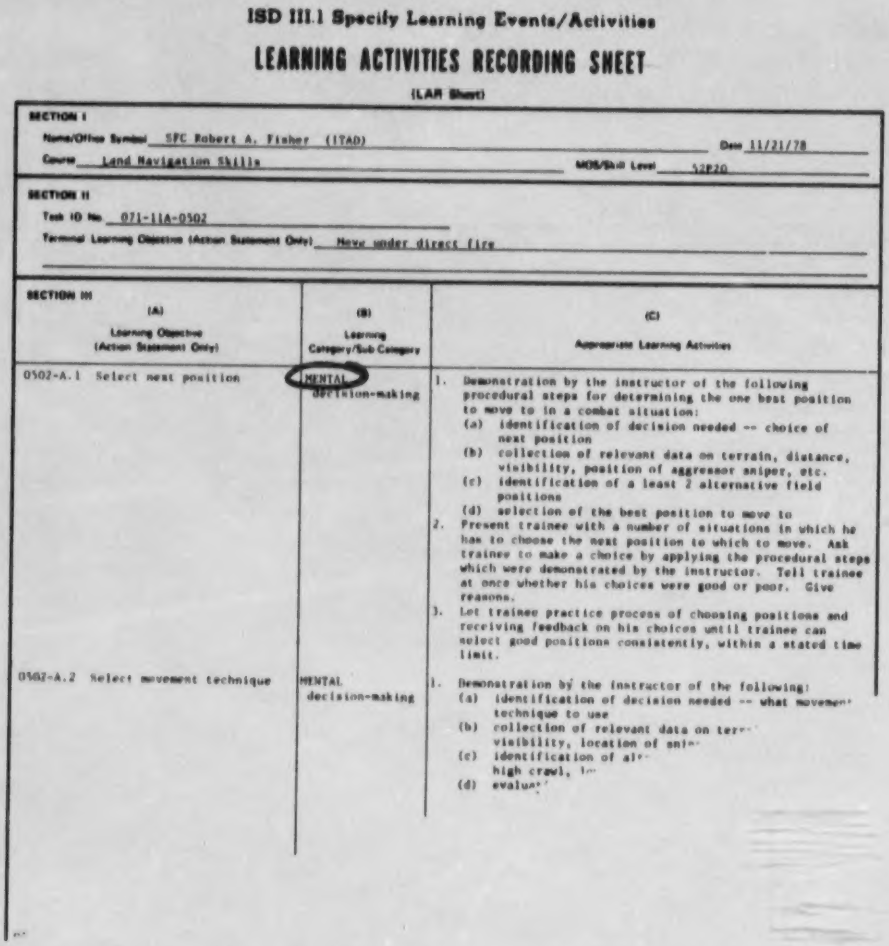
- **Assign the learning objective to one of the following three learning categories:**
  - **Mental**
  - **Physical**
  - **Attitudinal**
- **The learning category may already be available as output from previous ISD blocks (e.g., ISD II.1 Develop Objectives). If so, review the previously assigned learning category to be certain that it is correct. If you disagree with the category already assigned be certain that you coordinate with the individual(s) who made the initial category assignment. Together you should be able to arrive at the appropriate learning category for this objective.**
- **If you need assistance in determining the appropriate learning category to assign, refer to Manual, page I-11.**

How and Where do I Record the Learning Category for This Learning Objective?

- **The learning category is recorded in Column B, Section III of the LAR Sheet opposite the action statement of the learning objective.**

What Does the LAR Sheet Look Like After the Appropriate Learning Category Has Been Recorded?

EXAMPLE:



ISD III.1 Specify Learning Events/Activities

LEARNING ACTIVITIES RECORDING SHEET

(LAR Sheet)

SECTION I

Name/Office Symbol SFC Robert A. Fisher (ITAD) Date 11/21/78

Course Land Navigation Skills MOS/Skill Level 52P20

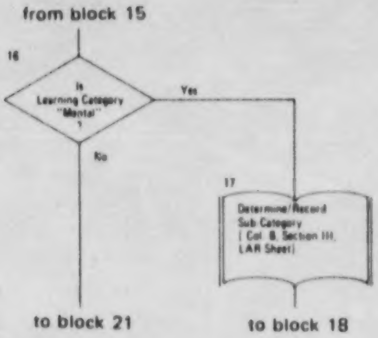
SECTION II

Task ID No. 071-11A-0502

Terminal Learning Objective (Action Statement Only) Move under direct fire

SECTION III

(A) Learning Objective (Action Statement Only)	(B) Learning Category/Sub Category	(C) Appropriate Learning Activities
0502-A.1 Select next position	MENTAL decision-making	1. Demonstration by the instructor of the following procedural steps for determining the one best position to move to in a combat situation: (a) identification of decision needed -- choice of next position (b) collection of relevant data on terrain, distance, visibility, position of aggressor sniper, etc. (c) identification of a least 2 alternative field positions (d) selection of the best position to move to 2. Present trainee with a number of situations in which he has to choose the next position to which to move. Ask trainee to make a choice by applying the procedural steps which were demonstrated by the instructor. Tell trainee at once whether his choices were good or poor. Give reasons. 3. Let trainee practice process of choosing positions and receiving feedback on his choices until trainee can select good positions consistently, within a stated time limit.
0502-A.2 Select movement technique	MENTAL decision-making	1. Demonstration by the instructor of the following: (a) identification of decision needed -- what movemen technique to use (b) collection of relevant data on ter visibility, location of sni (c) identification of al high crawl, lo (d) evalua


from block 15
16
Is Learning Category "Mental" ?
Yes
No
17
Determine/Record Sub Category (Col. B, Section III, LAR Sheet)
to block 21
to block 18

- The MENTAL learning category is subdivided into six subcategories. They are
  - identifying objects and symbols
  - recalling information
  - discriminating
  - classifying
  - rule learning and using
  - decision making
- For examples of each subcategory, see below

How do I Determine the Learning Subcategory for Learning Objectives Categorized as Mental?

- There are six learning subcategories associated with the MENTAL learning category. They are:

  — identifying objects and symbols
  — recalling information
  — discriminating
  — classifying
  — rule-learning and using
  — decision-making

- Table I-15 (page I-15) provides definitions for each of the learning subcategories. The Table also provides examples of action verbs and learning skills commonly associated with learning objectives that fall into the various learning subcategories. Study the table carefully.

- After studying Table I-15 you should have little difficulty in assigning your learning objectives to a subcategory. If you need help in making a decision, match the verbs in the learning objective to the Action Verbs in the table or try to find an example that would fit your learning objective. If you find yourself completely unable to fit a learning objective into any of the given subcategories, the objective may be incorrectly written. You may need to refine and rewrite it before it can be successfully assigned to one of the learning subcategories. If such is the case, be certain to coordinate with the individual who originally prepared the learning objective BEFORE YOU MAKE ANY CHANGES TO THE LEARNING OBJECTIVE.

Table I-15

MENTAL LEARNING CATEGORY

Definitions and Examples of Learning Subcategories

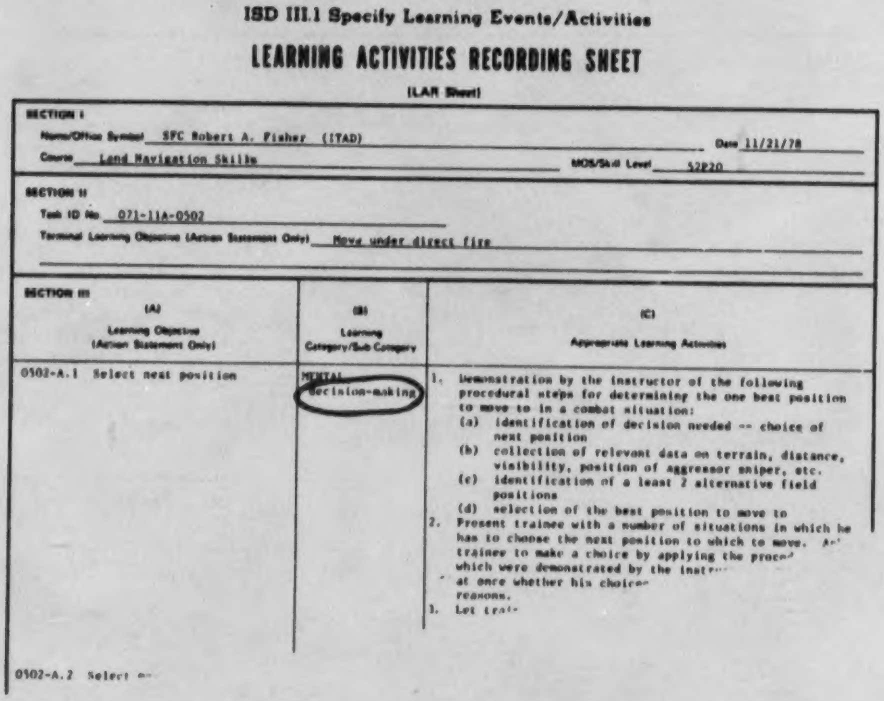
LEARNING SUBCATEGORY	DEFINITION OF SUBCATEGORY	COMMON ACTION VERBS	EXAMPLES
Identifying objects and symbols	To give one unvarying response whenever a particular object symbol is presented	Identify Interpret Read	Reading map symbols Reading electronic symbols on a schematic Giving names of components of an engine when shown engine or diagram of one
Recalling information	To repeat memorized information orally or in writing	List State Recite Define	Recalling radio frequencies Recalling rules of protocol Stating Ohm's law Recalling SALUTE acronym
Discriminating	When presented with items that appear to be similar, to identify the differences between them	Monitor Distinguish Detect Discriminate	Distinguishing between sound of normally-functioning power generator and sound of one in which a bearing is beginning to burn out Distinguishing between ranks of officers by stripes
Classifying	When presented with items that appear to be different, to identify the features which they have in common	Identify Recognize Classify	Identifying all aircraft which are U.S. aircraft Identifying problem situations in which a soldier is free to make a decision on his own without consulting a supervisor
Rule-learning and using	To state when and how a principle applies to a given situation	Select Predict Determine Specify Apply	Knowing when to salute Solving algebra problems Making verbs agree with their subjects Selecting proper fire extinguisher for different types of fire
Decision-making	To specify a course of action for use in a problem siguation	Choose Decide Formulate Select Evaluate	Troubleshooting malfunctioning equipment Choosing tactics in combat Choosing torpedo setting during a torpedo attack

How and Where do I Record the Learning Subcategory?

- **The learning subcategory is recorded in Section III, Column B. Look at the example below for an example of how it should be recorded.**

What Does the LAR Sheet Look Like After the Learning Subcategory Has Been Recorded?

EXAMPLE:



ISD III.1 Specify Learning Events/Activities

LEARNING ACTIVITIES RECORDING SHEET

(LAR Sheet)

SECTION I

Name/Office Symbol SFC Robert A. Fisher (ITAD) Date 11/21/78

Course Land Navigation Skills MOS/Skill Level 52P20

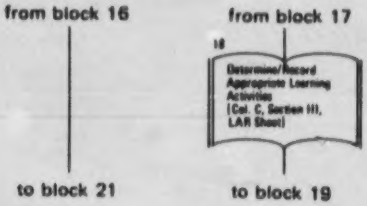
SECTION II

Task ID No. 071-11A-0502

Terminal Learning Objective (Action Statement Only) Move under direct fire

SECTION III

(A) Learning Objective (Action Statement Only)	(B) Learning Category/Sub Category	(C) Appropriate Learning Activities
0502-A.1 Select next position	MENTAL Decision-making	1. Demonstration by the instructor of the following procedural steps for determining the one best position to move to in a combat situation: (a) identification of decision needed -- choice of next position (b) collection of relevant data on terrain, distance, visibility, position of aggressor sniper, etc. (c) identification of a least 2 alternative field positions (d) selection of the best position to move to 2. Present trainee with a number of situations in which he has to choose the next position to which to move. A trainee to make a choice by applying the proce which were demonstrated by the instr at once whether his choice reasons. 3. Let trai
0502-A.2 Select n		


from block 16
from block 17
18
Determine/Record Appropriate Learning Activities (Col. C, Section III, LAR Sheet)
to block 21
to block 19

- Learning Activities necessary for teaching the learning objectives associated with each of the six subcategories of the MENTAL Learning Category are prepared and recorded on the LAR
- For further guidance in preparing and recording appropriate learning activities, see below.

How do I Identify Appropriate Learning Activities for Teaching Learning Objectives Categorized as Being Mental Skills?

- For each of the learning subcategories within the Mental Skill category there is a set of learning activities which must be used for teaching successfully all learning objectives belonging to that subcategory. The learning activities differ for the various subcategories. For example, the best method of teaching identification of objects is completely different from the best method of teaching decision-making.

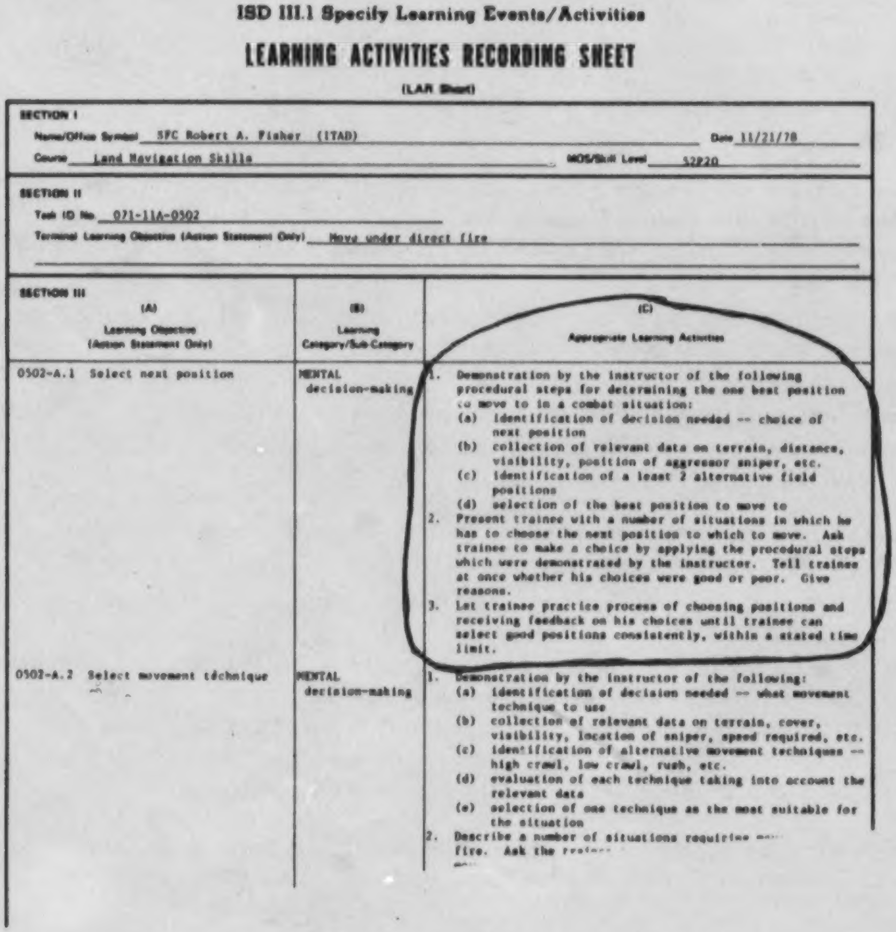
- Fortunately, education research has developed guidelines for the development of learning activities for each of the six subcategories. The six subcategories are shown on pages I-19 thru I-24. For each subcategory you will find the following information:
  - — The learning activities that must be featured (or emphasized) to train the objective falling into that subcategory.
  - — An example of a characteristic learning objective falling under the subcategory.
  - — Guidelines useful for developing appropriate learning activities.
  - — Example of appropriate learning activities for the learning objective used as an example.

- To identify the appropriate learning activities for teaching a learning objective. here is what you should do:
  - (1) Look at the subcategory for the learning objective under consideration (Column B, Section III, LAR Sheet).
  - (2) Turn to the page in the Manual (pages I-19 — I-24) that contains guidelines and examples for developing learning activities.
  - (3) Relate the learning guidelines shown on that page to your learning objective.
  - (4) Develop learning activities specific to your learning objective.

- Record the appropriate learning activities for training the learning objective for Column C, Section III, LAR Sheet.

What Does the LAR Sheet Look Like After Appropriate Learning Activities Have Been Recorded?

EXAMPLE:



ISD III.1 Specify Learning Events/Activities

LEARNING ACTIVITIES RECORDING SHEET

(LAR Sheet)

SECTION I

Name/Office Symbol SFC Robert A. Fisher (ITAD) Date 11/21/78

Course Land Navigation Skills MOS/Skill Level 52P20

SECTION II

Task ID No. 071-11A-0502

Terminal Learning Objective (Action Statement Only) Move under direct fire

SECTION III

(A) Learning Objective (Action Statement Only)	(B) Learning Category/Sub-Category	(C) Appropriate Learning Activities
0502-A.1 Select next position	MENTAL decision-making	1. Demonstration by the instructor of the following procedural steps for determining the one best position to move to in a combat situation: (a) identification of decision needed -- choice of next position (b) collection of relevant data on terrain, distance, visibility, position of aggressor sniper, etc. (c) identification of a least 2 alternative field positions (d) selection of the best position to move to 2. Present trainee with a number of situations in which he has to choose the next position to which to move. Ask trainee to make a choice by applying the procedural steps which were demonstrated by the instructor. Tell trainee at once whether his choices were good or poor. Give reasons. 3. Let trainee practice process of choosing positions and receiving feedback on his choices until trainee can select good positions consistently, within a stated time limit.
0502-A.2 Select movement technique	MENTAL decision-making	1. Demonstration by the instructor of the following: (a) identification of decision needed -- what movement technique to use (b) collection of relevant data on terrain, cover, visibility, location of sniper, speed required, etc. (c) identification of alternative movement techniques -- high crawl, low crawl, rush, etc. (d) evaluation of each technique taking into account the relevant data (e) selection of one technique as the most suitable for the situation 2. Describe a number of situations requiring [illegible] fire. Ask the [illegible]

IDENTIFYING OBJECTS AND SYMBOLS

LEARNING ACTIVITIES MUST FEATURE: a constant pairing and association between the objects/symbols and their names/meanings.

EXAMPLE OF LEARNING OBJECTIVE: The soldier will state the meainings of five terrain symbols found on military maps.

Guidelines for Determining Appropriate Learning Activities	Examples of Appropriate Learning Activities
1. Present each object/symbol and simultaneously state its name or meaning.	1. Present drawing of each of five map symbols and simultaneously state what each stands for.
2. Present each object/symbol and ask trainee to give its name or meaning. Give immediate feedback on responses.	2. Present each of five map symbols (in any sequence) and ask the trainee to state what each stands for. Tell trainee immediately whether his responses were right or wrong.
3. Repeat step 2 until trainee can give all names/meaning correctly and quickly.	3. Repeat step 2 until the trainee can correctly state what each of the five symbols stands for.

68

RECALLING INFORMATION

LEARNING ACTIVITIES MUST FEATURE: the use of patterns for organizing the information to be recalled, and testing of the trainee's ability to recall information without prompting.

EXAMPLE OF LEARNING OBJECTIVE: The soldier will list the kinds of information concerning aggressor personnel which should be reported to his superiors.

Guidelines for Determining Appropriate Learning Activities	Examples of Appropriate Learning Activities
1. Where possible, organize information to be learned into a meaningful pattern.	1. Organize information to be reported on concerning aggressor personnel into a meaningful pattern, (e.g. SALUTE – (acronym): S–ize A–ctivity L–ocation U–nit T–ime E–quipment
2. Let trainee memorize each section of information until the whole has been memorized.	2. Let trainee memorize each of the above six items until whole has been memorized.
3. Test trainee's ability to recall/recite the information. Give prompts and cues at first, then withdraw these. Give immediate feedback on accuracy of responses.	3. Test trainee's ability to recite the above information. Give prompts at first, then withdraw these completely. Tell trainee immediately whether and where he was right or wrong.
4. Repeat step 3 until trainee can recite/give information correctly.	4. Repeat step 3 until trainee can accurately recall information concerning aggressor personnel.

DISCRIMINATING

LEARNING ACTIVITIES MUST FEATURE: a side-by-side comparison of the items to be discriminated, including pointing out the ways in which they differ; and practice by the trainee in making discriminations.

EXAMPLE OF LEARNING OBJECTIVE: The soldier will distinguish between a severe burn and a minor burn.

Guidelines for Determining Appropriate Learning Activities	Examples of Appropriate Learning Activities
1. Present apparently similar items side-by-side. Point out the differences beweeen them.	1. Present color photographs of a severe burn and a minor burn side by side. Point out that the skin is charred or blistered over a large area in a severe burn, while the skin is neither blistered nor charred (or is blistered over a small area only) in a minor burn.
2. Present examples of apparently similar items. Ask learner to distinguish between them. Give immediate feedback on trainee's responses.	2. Present other color photographs of both severe and minor burns. Ask the trainee to distinguish between them. Tell the trainee at once whether his responses were correct or incorrect.
3. Repeat step 2 until trainee can make discriminations with accurance and ease.	3. Repeat step 2 until trainee can correctly distinguish between both types of burns.

CLASSIFYING

LEARNING ACTIVITIES MUST FEATURE: a side-by-side comparison of the items to be classified, including pointing out ways in which they are alike; providing the trainee with a descriptive definition of the class being studied; and practice by the trainee in classifying.

EXAMPLE OF LEARNING OBJECTIVE: The soldier will recognize all aircraft belonging to the United States.

Guidelines for Determining Appropriate Learning Activities	Examples of Appropriate Learning Activities
1. Present apparently different items side by side. Point out the features they have in common (similarities).	1. Present color photographs of different U.S. aircraft side by side. Point out the markings and other features that identify them as belonging to the U.S.
2. Formulate a definition of the class based on the observed similarities.	2. Formulate a definition of the class – e.g., all U.S. aircraft have markings that look like this.
3. Present items which belong to the class as well as items which do not. Ask the trainee to identify those items which belong to the class. Give feedback on the accuracy of the trainee's response.	3. Present color photographs of various U.S. aircraft, USSR aircraft, and Chinese aircraft. Ask the trainee to pick out the U.S. aircraft. Tell trainee at once whether he is correct or incorrect.
4. Repeat step 3 until trainee can accurately classify items.	4. Repeat step 3 until trainee can correctly identify all aircraft belonging to the U.S.

RULE-LEARNING AND USING

LEARNING ACTIVITIES MUST FEATURE: an explanation of the rule and practice in applying it.

EXAMPLE OF LEARNING OBJECTIVE: The soldier will challenge all personnel attempting to enter his sector and will allow to enter only those giving the correct password.

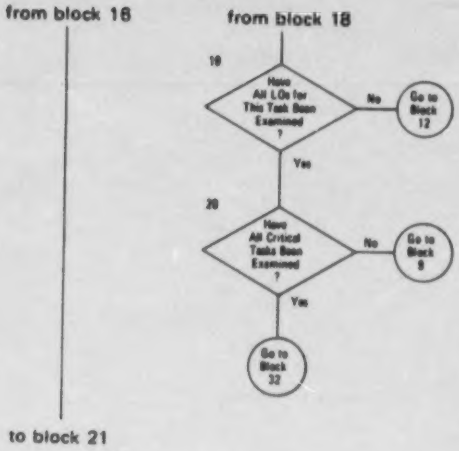
Guidelines for Determining Appropriate Learning Activities	Examples of Appropriate Learning Activities
1. Present and explain the rule.	1. Explain the rule – only those giving current password are to be allowed to enter. Explain procedure for requesting password – say "Halt!" 'cover' stranger Ask "Who is there?", etc.
2. Present a situation(s) in which the rule applies and show how it applies. Also, present a situation(s) in which the rule does not apply, for contrast.	2. Present situation where rule applies (e.g. in defensive position within designated sector of fire). Name situation (e.g., in barracks or dining facility) where rule does not apply.
3. Present a variety of situations, some requiring application of the rule and some not. Ask the trainee to identify those in which the rule applies and to state how it applies. Give immediate feedback on accuracy of trainee's responses.	3. Present a variety of situations and ask the trainee if and how the rule about challenging strangers applies – e.g., does it apply in the theater, outside militarized zone, in the motor pool, etc. Tell trainee if his responses are correct or incorrect and give reason for each.
4. Repeat step 4 until most or all trainee responses are correct.	4. Repeat step 3 until the trainee can correctly challenge a stranger most of the time.

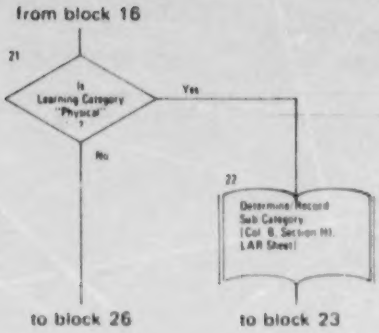
DECISION-MAKING

LEARNING ACTIVITIES MUST FEATURE: demonstration and practice in the identification of the decision needed, collection of relevant data and selection of best possible solution.

EXAMPLE OF LEARNING OBJECTIVE: The soldier will select the next position to which to move in the field under combat conditions.

Guidelines for Determining Appropriate Learning Activities	Examples of Appropriate Learning Activities
1. Demonstrate the following procedural steps: (a) identification of decision needed (b) collection of relevant data (c) formulation/identification of a number of possible solutions (d) evaluation of each solution (e) selection of the one best solution	1. Demonstration by the instructor of the following procedural steps for determining the one best next position to move to in a combat situation: (a) identification of decision needed – choice of next position (b) collection of relevant data on terrain, distance, visibility, position of aggressor sniper, etc. (c) identification of at least 2 alternative field positions (d) selection of the best position to move to
2. Present a number of problem situations. Ask the trainee to apply the procedural steps in order to make a decision about the problem situation. Give immediate feedback on the adequacy of the trainee's performance of task.	2. Present trainee with a number of situations in which he has to choose the next position to which to move. Ask trainee to make a choice by applying the procedural steps which were demonstrated by the instructor. Tell trainee at once whether his choices were good or poor. Give reasons.
3. Repeat step 2 until trainee generates adequate decisions in most problem situations.	3. Let trainee practice process of choosing positions and receiving feedback on his choices until trainee can select good positions consistently, within a stated time limit.


from block 16
to block 21
from block 18
19
Have All LOs for This Task Been Examined ?
No
Go to Block 12
Yes
20
Have All Critical Tasks Been Examined ?
No
Go to Block 8
Yes
Go to Block 32


from block 16
21
Is Learning Category "Physical" ?
Yes
No
22
Determine/Record Sub Category (Col 8, Section III, LAR Sheet)
to block 26
to block 23

- The PHYSICAL learning category is subdivided into two subcategories. They are
  - gross motor skill
  - responsive motor skill
- For examples of each subcategory, see below

How do I Determine the Learning Subcategory for Learning Objectives Categorized as Physical?

- There are two learning subcategories associated with the PHYSICAL learning category. They are:
  - **— gross motor skill**
  - **— responsive motor skill**
- Table I-26 provides definitions for the two learning subcategories. The table also provides examples of action verbs and learning skills commonly associated with learning objectives that fall into the learning subcategories. Study the table carefully.

Table I-26

PHYSICAL LEARNING CATEGORY

Definitions and Examples of Learning Subcategories

LEARNING SUBCATEGORY	DEFINITION OF SUBCATEGORY	COMMON ACTION VERBS	EXAMPLES
Gross motor skill	To move all or parts of the body in order to perform a set action.	Cut Weld Saw Drill Splice Draw	Using a drill Painting a ship's hull Loading a gun
Responsive motor skill	To move all or parts of the body in response to continually changing cues to action.	Track Control Steer Guide Regulate	Driving car along road Air to air gunnery target tracking Holding a course with a gyro or magnetic compass

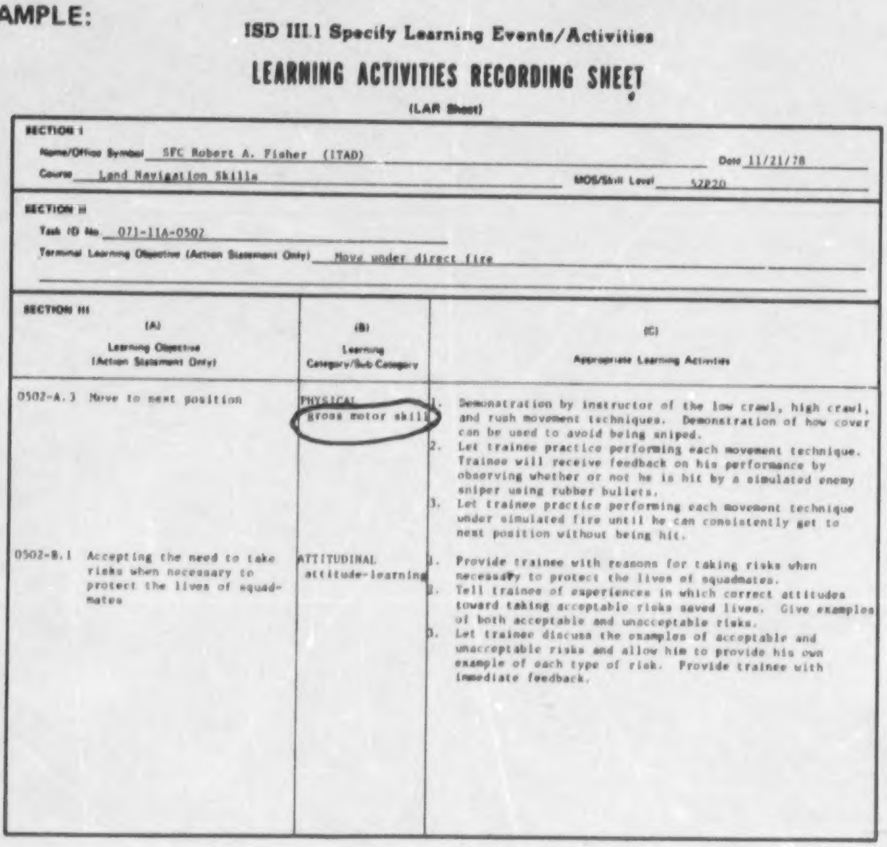
- After studying Table I-26 you should have little difficulty in assigning your learning objective to a subcategory. If you need help in making a decision, match the verbs in the learning objective to the Action Verbs in the table or try to find an example that would fit your learning objective. If you find yourself completely unable to fit a learning objective into either of the two subcategories, the objective may be incorrectly written. You may need to refine and rewrite it before it can be successfully assigned to one of the learning categories. If such is the case, be certain to coordinate with the individual who originally prepared the learning objective BEFORE YOU MAKE ANY CHANGES TO THE LEARNING OBJECTIVE.

How and Where do I Record the Learning Subcategory?

- **The learning subcategory is recorded in Section III, Column B. See below for an example of how it looks after it has been recorded.**

What Does the LAR Sheet Look Like After the Learning Subcategory Has Been Recorded?

EXAMPLE:



ISD III.1 Specify Learning Events/Activities

LEARNING ACTIVITIES RECORDING SHEET

(LAR Sheet)

SECTION I

Name/Office Symbol SFC Robert A. Fisher (ITAD) Date 11/21/78

Course Land Navigation Skills MOS/Skill Level 52P20

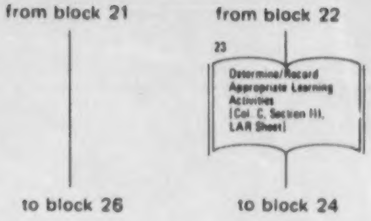
SECTION II

Task ID No. 071-11A-0502

Terminal Learning Objective (Action Statement Only) Move under direct fire

SECTION III

(A) Learning Objective (Action Statement Only)	(B) Learning Category/Sub Category	(C) Appropriate Learning Activities
0502-A.3 Move to next position	PHYSICAL gross motor skill	1. Demonstration by instructor of the low crawl, high crawl, and rush movement techniques. Demonstration of how cover can be used to avoid being sniped. 2. Let trainee practice performing each movement technique. Trainee will receive feedback on his performance by observing whether or not he is hit by a simulated enemy sniper using rubber bullets. 3. Let trainee practice performing each movement technique under simulated fire until he can consistently get to next position without being hit.
0502-B.1 Accepting the need to take risks when necessary to protect the lives of squadmates	ATTITUDINAL attitude-learning	1. Provide trainee with reasons for taking risks when necessary to protect the lives of squadmates. 2. Tell trainee of experiences in which correct attitudes toward taking acceptable risks saved lives. Give examples of both acceptable and unacceptable risks. 3. Let trainee discuss the examples of acceptable and unacceptable risks and allow him to provide his own example of each type of risk. Provide trainee with immediate feedback.


from block 21
from block 22
23
Determine/Record Appropriate Learning Activities (Col. C, Section III, LAR Sheet)
to block 26
to block 24

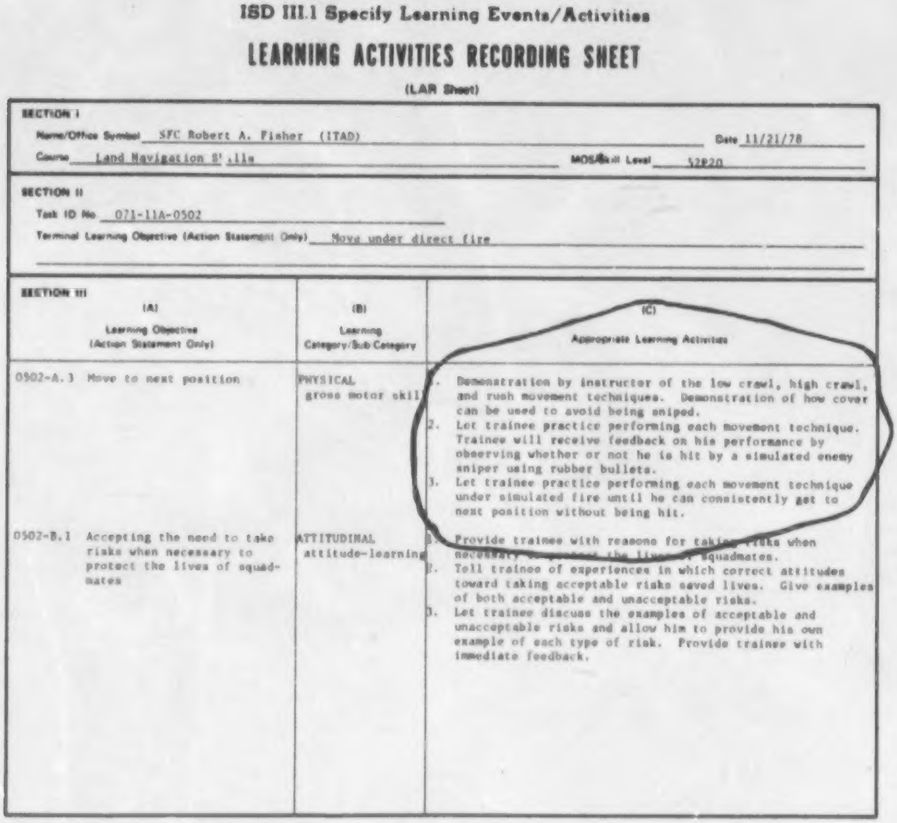
- Learning activities necessary for teaching the learning objectives associated with each of the two subcategories of the PHYSICAL Learning Category are prepared and recorded on the LAR Sheet.
- For further guidance in preparing and recording appropriate learning activities, see below.

How do I Identify Appropriate Learning Activities for Teaching Learning Objectives Categorized as Being Physical Skills?

- There is an individual set of learning activities which must be used for successfully teaching learning objectives belonging to each of the two subcategories under the PHYSICAL Learning Category. Guidelines for developing the learning activities are provided on the pages shown below:
  - — Gross Motor Skill — Page I-30.
  - — Responsive Motor Skill — Page I-31.
- To identify the appropriate learning activities for teaching a learning objective categorized into one of the two physical subcategories do the following:
  1. (1) Look at the subcategory for the learning objective under consideration. (Column B, Section III, LAR Sheet).
  2. (2) Turn to the page in the Manual (Page I-30 or Page I-31) that contains guidelines and examples for developing learning activities for that subcategory.
  3. (3) Relate the learning guidelines shown on that page to your learning objective.
  4. (4) Develop learning activities specific to your learning objective.
- Record the appropriate learning activities for training the learning objective in Column C, Section III, LAR Sheet.

What Does the Learning Activities Recording Sheet (LAR) Look Like After Appropriate Learning Activities Have Been Recorded?

EXAMPLE:



ISD III.1 Specify Learning Events/Activities

LEARNING ACTIVITIES RECORDING SHEET

(LAR Sheet)

SECTION I

Name/Office Symbol SFC Robert A. Fisher (ITAD) Date 11/21/78

Course Land Navigation Skills MOS/Skill Level 52P20

SECTION II

Task ID No 071-11A-0502

Terminal Learning Objective (Action Statement Only) Move under direct fire

SECTION III

(A) Learning Objective (Action Statement Only)		(B) Learning Category/Sub Category	(C) Appropriate Learning Activities
0502-A.3	Move to next position	PHYSICAL gross motor skill	1. Demonstration by instructor of the low crawl, high crawl, and rush movement techniques. Demonstration of how cover can be used to avoid being sniped. 2. Let trainee practice performing each movement technique. Trainee will receive feedback on his performance by observing whether or not he is hit by a simulated enemy sniper using rubber bullets. 3. Let trainee practice performing each movement technique under simulated fire until he can consistently get to next position without being hit.
0502-B.1	Accepting the need to take risks when necessary to protect the lives of squadmates	ATTITUDINAL attitude-learning	1. Provide trainee with reasons for taking risks when necessary to protect the lives of squadmates. 2. Tell trainee of experiences in which correct attitudes toward taking acceptable risks saved lives. Give examples of both acceptable and unacceptable risks. 3. Let trainee discuss the examples of acceptable and unacceptable risks and allow him to provide his own example of each type of risk. Provide trainee with immediate feedback.

GROSS MOTOR SKILL

LEARNING ACTIVITIES MUST FEATURE: a demonstration of, and opportunity to practice, the whole task/skill.

EXAMPLE OF LEARNING OBJECTIVE: The soldier will load an M16A1 rifle.

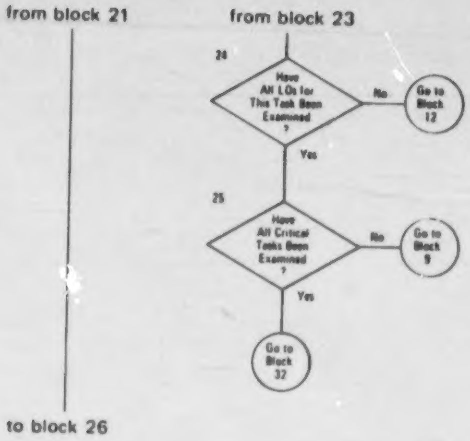
Guidelines for Determining Appropriate Learning Activities	Examples of Appropriate Learning Activities
1. Demonstrate performance of the whole task. (If task is complex or lengthy, break into parts, and demonstrate each part separately at first).	1. Demonstrate steps in loading the rifle: – locate cartridges – insert cartridges in magazine
2. Let trainee practice performing whole task. (or practice performing parts of task separately at first). Give/provide immediate feedback on accuracy and adequacy of trainee's performance of task.	2. Let trainee practice steps in the task. Tell him at once whether he loaded the rifle correctly.
3. Repeat step 2 until trainee can perform task well and as quickly as required.	3. (If necessary), have trainee repeat process until he can do it within the stated time limit and can perform it accurately.

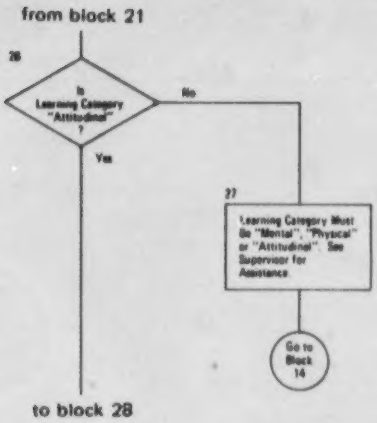
RESPONSIVE MOTOR SKILL

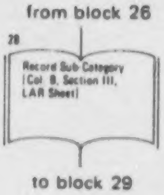
LEARNING ACTIVITIES MUST FEATURE: a demonstration of the skill/task by the instructor and trainee practice in performing the skill/task, including use of senses to detect clues to changing performance.

EXAMPLE OF LEARNING OBJECTIVE: The soldier will drive a utility truck, 1/4 ton, M151,A1 cross country.

Guidelines for Determining Appropriate Learning Activities	Examples of Appropriate Learning Activities
1. Demonstrate whole task, pointing out cues that initiate and end performance of each step in task.	1. Demonstrate driving the truck, pointing out cues that influence action, such as: – speedometer – road signs – curves in road – trees and other roadside terrain – lane markings
2. Let trainee practice performing task, using his senses to receive feedback on his performance.	2. Let trainee practice driving the truck, using his five senses to detect cues that influence the action of driving (see above). Trainee must manipulate the controls of the truck in response to such cues.
3. Repeat step 2 until trainee can perform task well and as quickly as required.	3. Let trainee practice driving the truck cross country until he becomes proficient at doing so accurately and safely.


from block 21
from block 23
24
Have All LOs for This Task Been Examined ?
No
Go to Block 12
Yes
25
Have All Critical Tasks Been Examined ?
No
Go to Block 9
Yes
Go to Block 32
to block 26


from block 21
26
Is Learning Category "Attitudinal" ?
No
Yes
27
Learning Category Must Be "Mental", "Physical" or "Attitudinal". See Supervisor for Assistance.
Go to Block 14
to block 28



- There is one subcategory under the ATTITUDINAL Category. It is:
  — attitude-learning
- For examples of this subcategory, see below.

How do I Determine the Learning Subcategory for Learning Objectives Categorized as Attitudinal?

- There is only one learning subcategory associated with the ATTITUDINAL learning category. It is "attitude-learning."
- Table I-34 provides a definition of the subcategory and provides examples of action verbs and learning skills commonly associated with learning objectives that fall into the attitude-learning subcategory. Study the table carefully.

Table I-34

ATTITUDINAL LEARNING CATEGORY

Definitions and Examples of Learning Subcategory

LEARNING SUBCATEGORY	DEFINITION OF SUBCATEGORY	COMMON ACTION VERBS	EXAMPLES
Attitude-learning	To exhibit a pattern of behavior or of response towards something	Accept Choose Comply with	Working instead of wasting time Complying with safety regulations Keeping bunk neat when opportunity exists to keep it untidy

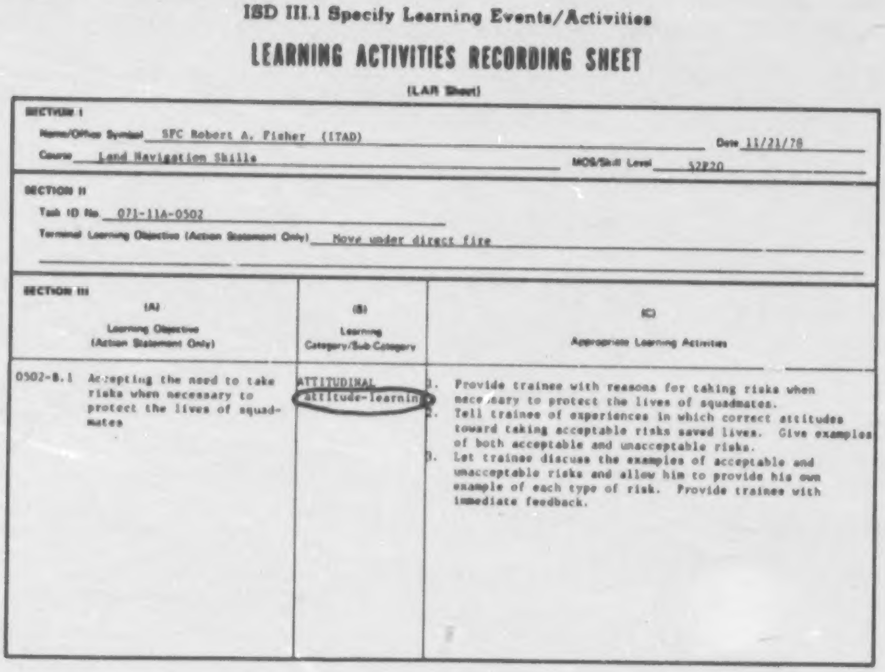
- If you find yourself unable to fit your learning objective into the attitude-learning subcategory see your supervisor for assistance. Perhaps the learning objective should have been categorized as MENTAL or PHYSICAL. Or perhaps the learning objective was incorrectly written. You may need to refine and rewrite it. If such is the case, be certain to coordinate with the individual who originally prepared the learning objective BEFORE YOU MAKE ANY CHANGES TO THE LEARNING OBJECTIVE'
- The learning subcategory (attitude-learning) is recorded in Section III, Column B. Look at the example on the following page to see how it should be recorded.

How and Where do I Record the Learning Subcategory?

- The learning subcategory (attitude-learning) is recorded in Section III, Column B. Look at the example provided below to see how it should be recorded.

What Does the LAR Sheet Look Like After the Learning Subcategory Has Been Recorded?

EXAMPLE:



ISD III.1 Specify Learning Events/Activities

LEARNING ACTIVITIES RECORDING SHEET

(LAR Sheet)

SECTION I

Name/Office Symbol SFC Robert A. Fisher (ITAD) Date 11/21/78

Course Land Navigation Skills MOS/Skill Level 52P20

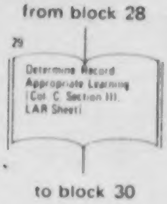
SECTION II

Task ID No. 071-11A-0502

Terminal Learning Objective (Action Statement Only) Move under direct fire

SECTION III

(A) Learning Objective (Action Statement Only)		(B) Learning Category/Sub-Category	(C) Appropriate Learning Activities
0502-B.1	Accepting the need to take risks when necessary to protect the lives of squad-mates	ATTITUDINAL attitude-learnin	1. Provide trainee with reasons for taking risks when necessary to protect the lives of squadmates. 2. Tell trainee of experiences in which correct attitudes toward taking acceptable risks saved lives. Give examples of both acceptable and unacceptable risks. 3. Let trainee discuss the examples of acceptable and unacceptable risks and allow him to provide his own example of each type of risk. Provide trainee with immediate feedback.


from block 28
29
Determine Record Appropriate Learning (Col. C, Section III, LAR Sheet)
to block 30

- Learning Activities necessary for teaching the learning objectives associated with attitude learning are prepared and recorded on the LAR Sheet.
- For further guidance in preparing and recording appropriate learning activities, see below.

How do I Identify Appropriate Learning Activities for Teaching Learning Objectives Categorized as Being Attitude-Learning?

- There is a set of learning activities which must be used for successfully teaching learning objectives categorized as being attitude-learning. Guidelines for developing the learning activities are provided on page I-37. Relate the learning guidelines to your learning objective and develop learning activities specific to your learning objective.

- Record the appropriate learning activities for training the learning objective in Column C, Section III, LAR Sheet.

ATTITUDE LEARNING

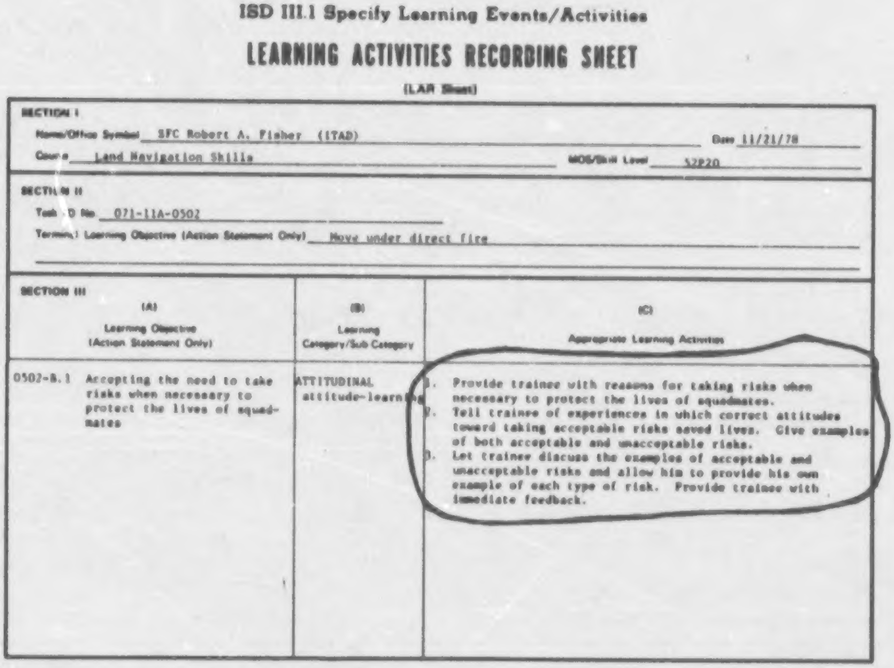
LEARNING ACTIVITIES MUST FEATURE: arrangement of the enviornment in which the trainee lives and works so that correct and appropriate behavior is elicited from the trainee. Reinforcement and rewarding of all instances of correct/appropriate behavior which the trainee demonstrates must be provided. NOTE: An attitude is a pattern of behaving or responding, not a mystical set of the mind. It is more difficult to get a trainee to adopt an attitude than it is to get him to acquire information or a skill. "Preaching" is rarely the best way of teaching attitudes. It is better to use means such as behavior modeling, giving rewards, etc.

EXAMPLE OF LEARNING OBJECTIVE: The soldier will keep his bunk neat and clean at all times.

Guidelines for Determining Appropriate Learning Activities	Examples of Appropriate Learning Activitise
1. State and/or demonstrate appropriate/desired behavior(s).	1. Describe the appropriate manner in which the soldier's bunk should be maintained.
2. Encourage trainee performance of appropriate/desired behaviors by using devices such as behavior modeling, role-playing, appeal to authority.	2. Encourage the trainee to keep the bunk neat by role-playing situation in which a messy bunk leads to loss of time, loss of priveleges, loss of equipment, etc. OR, show a film in which a soldier tidies his bunk, etc.
3. Reinforce/reward instances when trainee emits appropriate/desired behavior. Do not reinforce/reward instances of inappropriate/undesired behaviors. On occasion, and if relevant, punish inappropriate behaviors.	3. Praise the trainee whenever his bunk is left neat. Penalize him whenever it is kept messy.

What Does the Learning Activities Recording Sheet (LAR) Look Like After Appropriate Learning Activities Have Been Recorded?

EXAMPLE:



ISD III.1 Specify Learning Events/Activities

LEARNING ACTIVITIES RECORDING SHEET

(LAR Sheet)

SECTION I

Name/Office Symbol SFC Robert A. Fisher (ITAD) Date 11/21/78

Course Land Navigation Skills MOS/Skill Level 52P20

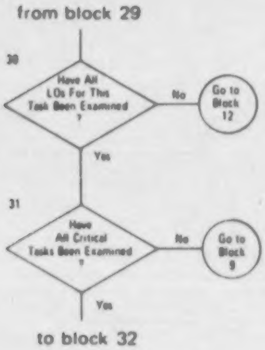
SECTION II

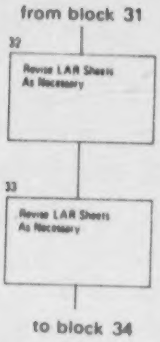
Task ID No. 071-11A-0502

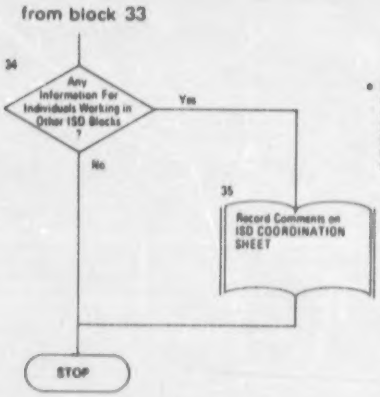
Terminal Learning Objective (Action Statement Only) Move under direct fire

SECTION III

(A) Learning Objective (Action Statement Only)		(B) Learning Category/Sub Category	(C) Appropriate Learning Activities
0502-B.1	Accepting the need to take risks when necessary to protect the lives of squadmates	ATTITUDINAL attitude-learning	1. Provide trainee with reasons for taking risks when necessary to protect the lives of squadmates. 2. Tell trainee of experiences in which correct attitudes toward taking acceptable risks saved lives. Give examples of both acceptable and unacceptable risks. 3. Let trainee discuss the examples of acceptable and unacceptable risks and allow him to provide his own example of each type of risk. Provide trainee with immediate feedback.


from block 29
30
Have All LOs For This Task Been Examined ?
No
Go to Block 12
Yes
31
Have All Critical Tasks Been Examined ?
No
Go to Block 9
Yes
to block 32


from block 31
32
Revise LAR Sheets
As Necessary
33
Revise LAR Sheets
As Necessary
to block 34


from block 33
34
Any Information For Individuals Working in Other ISD Blocks ?
Yes
No
35
Record Comments on ISD COORDINATION SHEET
STOP

- During the instruction activities selection process information may have been obtained that would be useful to persons who performed activities that fed into this step. Similarly, information may have been obtained that would be useful to persons who will be engaged in Instructional Systems Development steps that follow this one.

- Comments are recorded and submitted to appropriate persons.
- For further guidance, see below.

What is the Importance of Preparing Comments for People Working in Other Steps of the Instructional Systems Development Process? How do I Record Them?

In order for the Instructional Systems Development process to work effectively, it is imperative that there be forward and backward communication between the people involved in the process. At some time or other, you have probably complained about the input that has been provided to you. For example, you may have thought that the learning objectives which you need as input for this block were not as well written as they could have been. Sometimes, you may have had to do work that should have been performed in previous steps in the system.

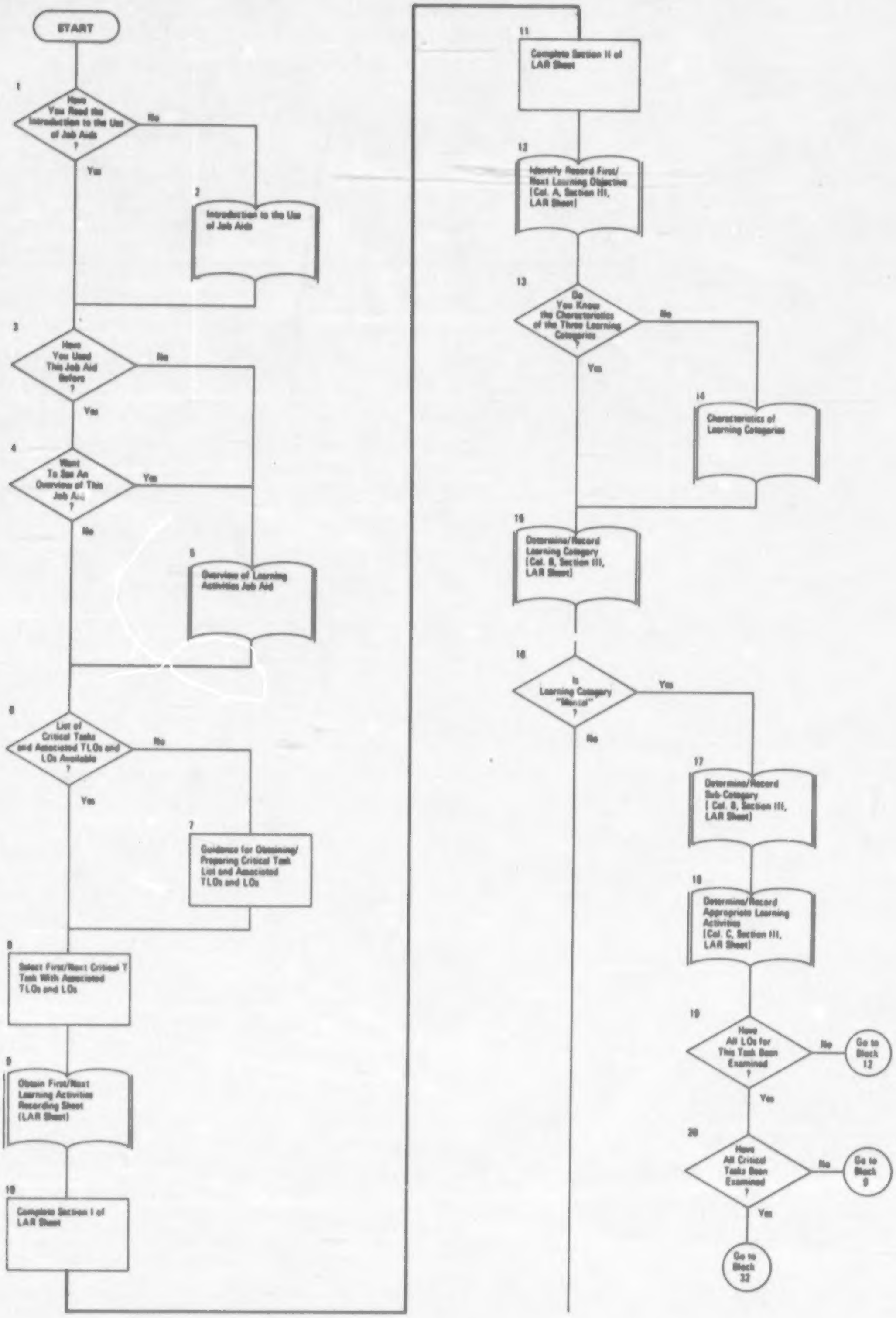
IT IS IMPORTANT THAT YOU FEED THIS INFORMATION BACK TO THE APPROPRIATE PEOPLE SO THAT REVISIONS CAN BE MADE TO EFFECT IMPROVEMENT IN THE END PRODUCT.

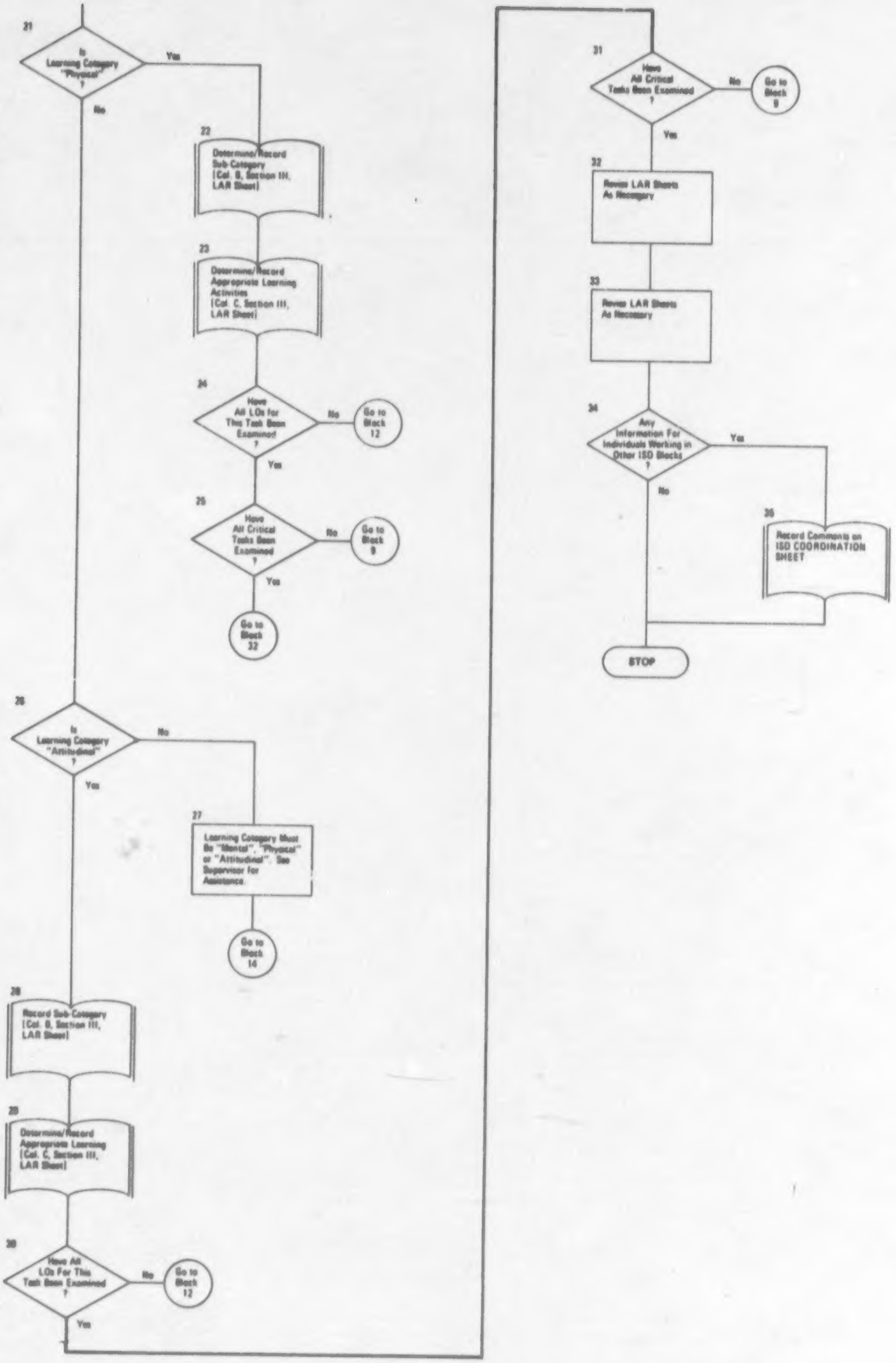
In your research for this step of the Instructional Systems Development process you may also have discovered information that you think may be useful to people who will be working in steps that follow this one. If so, it is equally important that you pass this information on to appropriate people.

REMEMBER, COMMUNICATION WITHIN THE INSTRUCTIONAL SYSTEMS DEVELOPMENT PROCESS IS CRITICAL FOR EFFECTIVE INSTRUCTIONAL DEVELOPMENT

- A copy of the ISD COORDINATION SHEET can be found in the back of this manual. Make sufficient copies to enable you to send one to every individual you wish to communicate with—plus copies for your records.

- Complete the ISD COORDINATION SHEET in duplicate. Send one copy to the individual and attach one copy to the Instruction Settings Selection Package (ISR Sheets).


START
1
Have You Read the Introduction to the Use of Job Aids ?
No
Yes
2
Introduction to the Use of Job Aids
3
Have You Used This Job Aid Before ?
No
Yes
4
Want To See An Overview of This Job Aid ?
Yes
No
5
Overview of Learning Activities Job Aid
6
List of Critical Tasks and Associated TLOs and LOs Available ?
No
Yes
7
Guidance for Obtaining/Preparing Critical Task List and Associated TLOs and LOs
8
Select First/Next Critical T Task With Associated TLOs and LOs
9
Obtain First/Next Learning Activities Recording Sheet (LAR Sheet)
10
Complete Section I of LAR Sheet
11
Complete Section II of LAR Sheet
12
Identify Record First/Next Learning Objective [Col. A, Section III, LAR Sheet]
13
Do You Know the Characteristics of the Three Learning Categories ?
No
Yes
14
Characteristics of Learning Categories
15
Determine/Record Learning Category [Col. B, Section III, LAR Sheet]
16
Is Learning Category "Mental" ?
Yes
No
17
Determine/Record Sub-Category [Col. B, Section III, LAR Sheet]
18
Determine/Record Appropriate Learning Activities [Col. C, Section III, LAR Sheet]
19
Have All LOs for This Task Been Examined ?
No
Go to Block 12
Yes
20
Have All Critical Tasks Been Examined ?
No
Go to Block 9
Yes
Go to Block 32



21
Is Learning Category "Physical" ?
Yes
No
22
Determine/Record Sub Category (Col. B, Section III, LAR Sheet)
23
Determine/Record Appropriate Learning Activities (Col. C, Section III, LAR Sheet)
24
Have All LOs for This Task Been Examined ?
No
Go to Block 12
Yes
25
Have All Critical Tasks Been Examined ?
No
Go to Block 9
Yes
Go to Block 32
26
Is Learning Category "Attitudinal" ?
No
Yes
27
Learning Category Must Be "Mental", "Physical" or "Attitudinal". See Supervisor for Assistance.
Go to Block 14
28
Record Sub-Category (Col. B, Section III, LAR Sheet)
29
Determine/Record Appropriate Learning (Col. C, Section III, LAR Sheet)
30
Have All LOs For This Task Been Examined ?
No
Go to Block 12
Yes
31
Have All Critical Tasks Been Examined ?
No
Go to Block 9
Yes
32
Revise LAR Sheets As Necessary
33
Revise LAR Sheets As Necessary
34
Any Information For Individuals Working in Other ISD Blocks ?
Yes
No
35
Record Comments on ISD COORDINATION SHEET
STOP

JOB AID FOR
SPECIFYING INSTRUCTIONAL MANAGEMENT PLAN AND DELIVERY SYSTEM

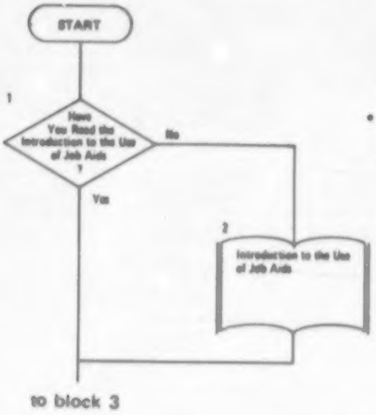
ISD III.2

Manual

This is the 10th in a series of ISD Job Aids for use in instructional design and development. This volume is to be used as a supplement to the primary document, "Job Aids: Descriptive Authoring Flowcharts ISD III.2 Specify Instructional Management Plan and Delivery System." The flowchart document will direct you to specific guidance, examples, and references provided in this volume. If you do not have the primary flowchart document, request it from your supervisor.

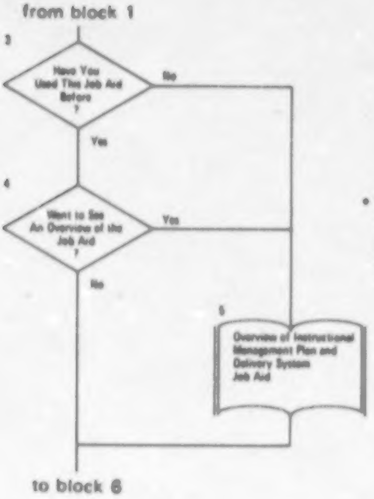
The wording in this manual should not be construed to discriminate between the sexes. In order to avoid a repetitious use of the terminology, "he/she," the terms, "he," "him," and "his," as well as "men," are intended to include both the masculine and feminine gender. Any exceptions to this usage will be so noted.

ISD III.2 Specify Instructional Management Plan and Delivery System


START
1
Have You Read the Introduction to the Use of Job Aids ?
No
Yes
2
Introduction to the Use of Job Aids
to block 3

- This introduction provides the user with instruction on the basic structure of the Job Aids and gives guidance for their use.

- Refer to Introduction.


from block 1
3
Have You Used This Job Aid Before ?
No
Yes
4
Want to See An Overview of the Job Aid ?
Yes
No
5
Overview of Instructional Management Plan and Delivery System Job Aid
to block 6

- Overview includes
  - Goal
  - Objectives
  - Products
  - Major steps in process
  - Worksheet used
  - Descriptive flowchart

- For detailed overview, see below.

What is the Job Aid for Selecting Delivery Systems all about?

- **GOAL**

  — The purpose of this job aid is to help you apply a systematic approach to the selection of delivery systems (media) for presenting instruction to trainees. This systematic approach to media selection requires consideration of the nature of the objectives: their learning categories/subcategories, learning activities and instructional settings. Such factors as equipment and facility constraints, cost of procurement, cost of replacement, development costs, etc. must also be considered.

  — Once the candidate delivery systems have been selected, the management plan can be specified. Please note that this job aid includes only the selection of delivery systems.

- **OBJECTIVES**

  1) Given a group of learning objectives (LOs) with their specified learning activities, instructional settings and learning categories, use the appropriate learning subcategory matrix to select candidate delivery system(s) for each LO.

  2) From the list of candidate delivery systems, select the one(s) most appropriate for the whole task rather than for the whole course.

NOTE: **Do not spend too much time reading or studying this material. You will be given more specific information later.**

- **PRODUCTS**

  — The input for this block is the learning activities, learning categories, and instructional settings for each learning objective. The output, or products, include:

  - A completed Delivery System Planning (DSP) Sheet for each task showing:
    a) candidate delivery systems
    b) selected delivery system(s) for whole task
  - Final decision on the delivery system(s) to be used for a whole course. This decision is recorded in the System Master Plan, which is not included in this job aid.

OVERVIEW OF MAJOR STEPS IN SELECTING INSTRUCTIONAL DELIVERY SYSTEMS

Step 1. Learning objectives action statements with their corresponding learning categories/subcategories are recorded on DSP Sheet.

Step 2. On the appropriate learning subcategory matrix, the criteria specified by the inputs to this block are checked.

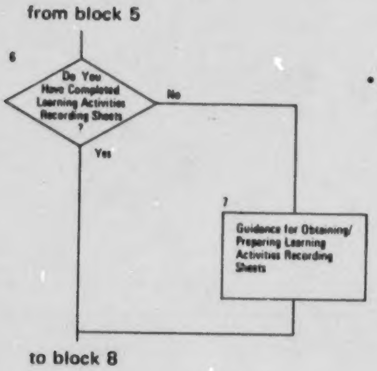
Step 3. These checked criteria are examined in reference to each delivery system on the matrix to determine which systems meet the criteria.

Step 4. Based on this examination, candidate delivery systems are specified and recorded on the DSP Sheet. Final selections are made with the help of management.

NOTE: **Do not spend too much time reading or studying this material. You will be given more specific information later.**

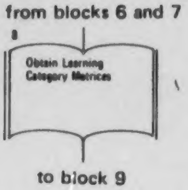
- **WORKSHEET USED**
  - A partially completed Delivery System Planning (DSP) Sheet can be seen on pages J-48 and J-49.
  - Learning Category Matrices are shown on pages J-50 through J-58.
- **DESCRIPTIVE FLOWCHART**
  - The flowchart on pages J-59 through J-61 shows the steps in the use of the Job Aid for Selecting Delivery Systems. The flowchart will be useful to you in getting a clear picture of the overall process used in this job aid.

NOTE: Do not spend too much time reading or studying this material. You will be given more specific information later.


from block 5
6
Do You Have Completed Learning Activities Recording Sheets ?
No
Yes
7
Guidance for Obtaining/ Preparing Learning Activities Recording Sheets
to block 8

- These sheets describe the learning activities suggested for every learning objective within a single task.

- Learning activities for each task should be available as output from ISD III.1 Specify Learning Events/Activities.
- If procedures for specifying learning activities were not complete, go to Job Aid: Descriptive Authoring Flowcharts, I-3.
- When lists of learning objectives and their corresponding learning activities have been obtained, return to Block 6.



- Learning Category Matrices are available for all nine learning subcategories. They are used to select the most appropriate delivery system for training each task.
- For further information and guidance on obtaining Learning Category Matrices, see below.

What are the Learning Category Matrices?

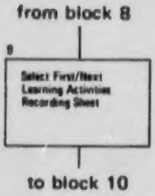
- The matrices are designed to help you make decisions for the most appropriate media (delivery systems) for each learning objective, or group of learning objectives.
- The items on each matrix are:

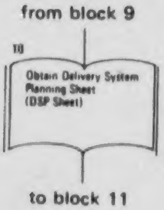
  1) Criteria for Selecting Instructional Delivery Systems
     a) Training Setting Criteria
     b) Administrative Criteria
     c) Stimulus Criteria
     d) Complexity Criteria
  2) Alternative Instructional Delivery Systems
     a) Delivery approaches permitting the application of all learning guidelines (suggested activities) for that learning subcategory
     b) Delivery approaches that permit the use of only some of the guidelines
  3) Names of the Media
     - Since many of the names may be unfamiliar or different from the terms used by your school, a glossary of instructional delivery systems is provided, if needed, in a later step of this job aid.

- To see examples of the matrices refer to pages J-50 through J-58.
- Note that all of the Criteria for Selecting Instructional Delivery Systems are not listed for each subcategory. When one or more criteria are missing it is because they do not contribute to the analysis for that particular subcategory.

Where do I obtain Learning Category Matrices?

- Learning Category Matrices are available for duplication in the pocket at the end of this manual.
- Note that there are nine matrices covering the front and back of two separate sheets. The six mental skills subcategories are on one sheet. The two physical and one attitudinal skills are on the other.
- Make several copies of each sheet as you will be using them over and over again.

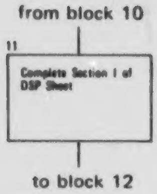

from block 8
9
Select First/Next
Learning Activities
Recording Sheet
to block 10


from block 9
10
Obtain Delivery System Planning Sheet (DSP Sheet)
to block 11

- Delivery System Planning (DSP) Sheets are used to document candidate delivery systems which meet the criteria specified by the learning activities for each objective. From this group of candidate delivery systems the final selection of delivery system(s) for the whole task is made.
- For guidance in obtaining DSP Sheets, see below.

Where can I get the Delivery System Planning (DSP) Sheets?

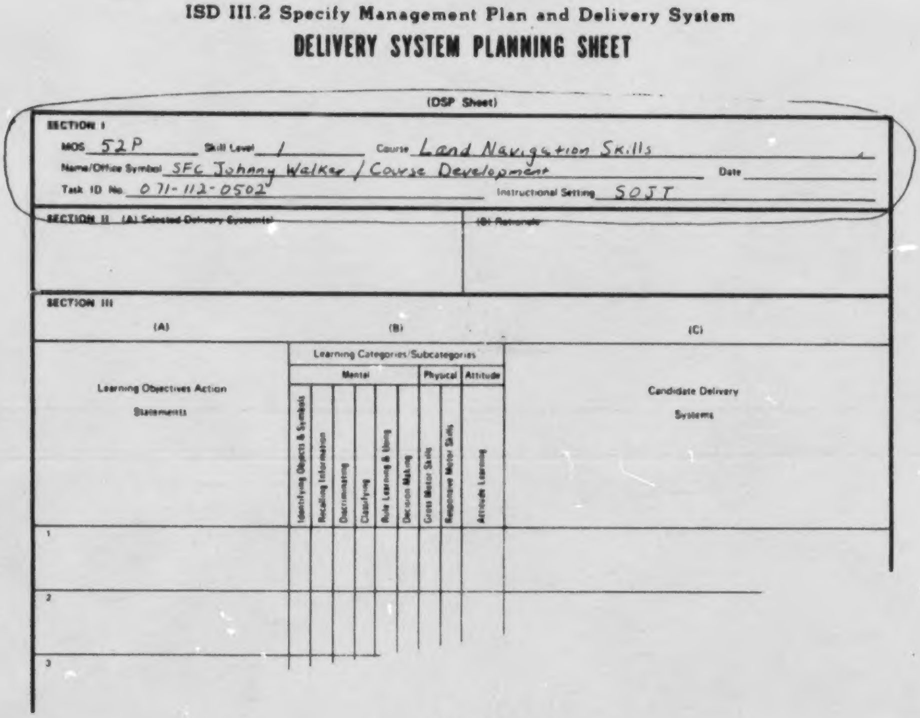
- Delivery System Planning Sheets (DSP) are available for duplication in the pocket at the back of this manual.
- To see a partially completed DSP Sheet refer to page J-48.



- Identifying information includes:
  - MOS
  - Skill level
  - Course title
  - Name/Office Symbol
  - Date
  - Task I.D. number } located on Learning Activities Recording Sheet
  - Instructional setting } located on Learning Activities Recording Sheet
- For example, see below.

What does the DSP Sheet look like when Section I has been completed?

Example:



ISD III.2 Specify Management Plan and Delivery System

DELIVERY SYSTEM PLANNING SHEET

(DSP Sheet)

SECTION I

MOS 52P Skill Level 1 Course Land Navigation Skills

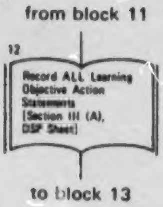
Name/Office Symbol SFC Johnny Walker / Course Development Date

Task ID No. 071-112-0502 Instructional Setting SOJT

SECTION II (A) Selected Delivery System(s) (B) Rationale

SECTION III

(A)	(B)										(C)
Learning Objectives Action Statements	Learning Categories/Subcategories										Candidate Delivery Systems
	Mental						Physical		Attitude		
	Identifying Objects & Symbols	Recalling Information	Discriminating	Classifying	Rule Learning & Using	Decision Making	Gross Motor Skills	Responsive Motor Skills	Attitude Learning		
1											
2											
3											

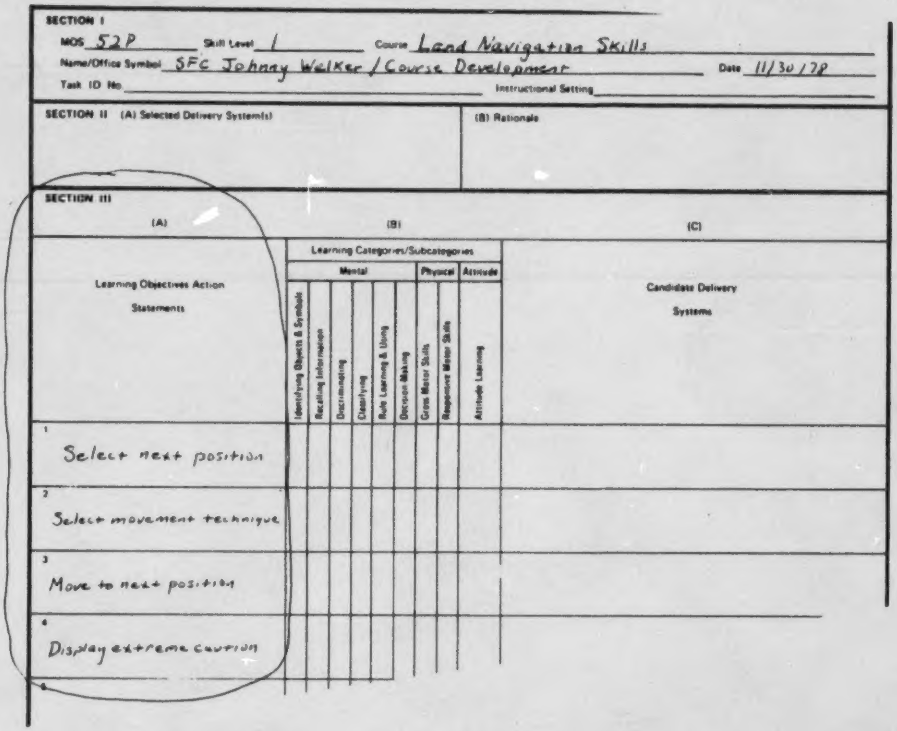

from block 11
12
Record ALL Learning Objective Action Statements [Section III (A), DSP Sheet]
to block 13

- For further information and guidance, see below.

How do I record all the learning objectives action statements?

- The learning objectives action statements (do not include conditions and standards) can be copied directly from the Learning Activities Recording Sheet, or any previously prepared worksheet on which the LOs are recorded.
- Record all the LO action statements belonging to the task.

Example:



SECTION I

MOS 52P Skill Level 1 Course Land Navigation Skills

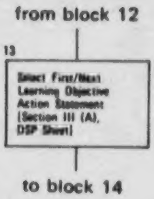
Name/Office Symbol SFC Johnny Welker / Course Development Date 11/30/78

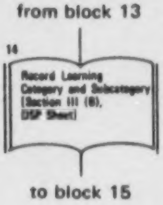
Task ID No ______ Instructional Setting ______

SECTION II (A) Selected Delivery System(s) (B) Rationale

SECTION III

(A)	(B)									(C)
Learning Objectives Action Statements	Learning Categories/Subcategories									Candidate Delivery Systems
	Mental						Physical		Attitude	
	Identifying Objects & Symbols	Recalling Information	Discriminating	Classifying	Rule Learning & Using	Decision Making	Gross Motor Skills	Responsive Motor Skills	Attitude Learning	
1 Select next position										
2 Select movement technique										
3 Move to next position										
4 Display extreme caution										
5										


from block 12
13
Select First/Next
Learning Objective
Action Statement
(Section III (A),
DSP Sheet)
to block 14


from block 13
14
Record Learning Category and Subcategory [Section III (B), DSP Sheet]
to block 15

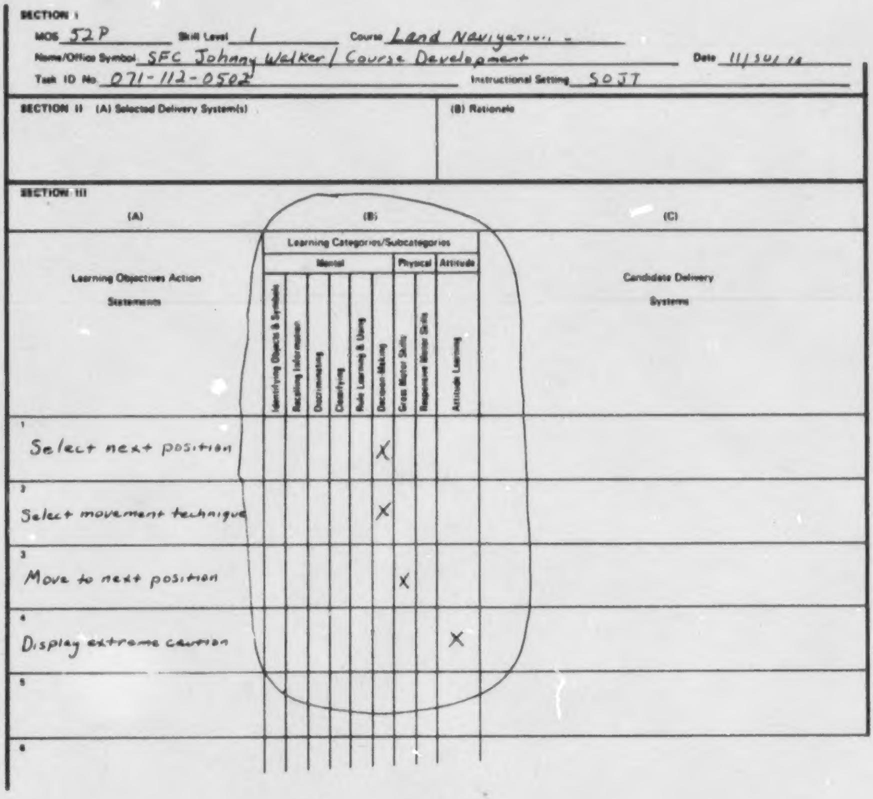
- For further information and guidance, see below.

How do I record the learning category and subcategory?

- **The learning category and subcategory for each LO can be copied directly from the Learning Activities Recording Sheet, or any previously prepared worksheet on which this informatinn is recorded.**

- **Record the learning category/subcategory for each objective by placing an "X" in the appropriate cell in Section III (B).**

Example:

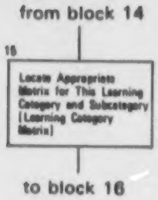


SECTION I
MOS 52P Skill Level 1 Course Land Navigation
Name/Office Symbol SFC Johnny Welker / Course Development Date 11/30/
Task ID No. 071-112-0502 Instructional Setting SOJT

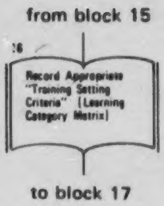
SECTION II (A) Selected Delivery System(s)	(B) Rationale

SECTION III

(A)	(B)									(C)
Learning Objectives Action Statements	Learning Categories/Subcategories									Candidate Delivery Systems
	Mental						Physical		Attitude	
	Identifying Objects & Symbols	Recalling Information	Discriminating	Classifying	Rule Learning & Using	Decision Making	Gross Motor Skills	Responsive Motor Skills	Attitude Learning	
1 Select next position						X				
2 Select movement technique						X				
3 Move to next position							X			
4 Display extreme caution									X	
5										
6										


from block 14
15
Locate Appropriate Matrix for This Learning Category and Subcategory (Learning Category Matrix)
to block 16

- The matrix is located for the learning subcategory which has an X in Section III B for this objective. For example, if there is an X in the column for Gross Motor Skills, then that is the matrix to be used.


from block 15
16
Record Appropriate "Training Setting Criteria" [Learning Category Matrix]
to block 17

- A light check mark (√) is made on the matrix to indicate the criteria specified by the instructional setting and learning activities for this objective.
- For further guidance, see below.

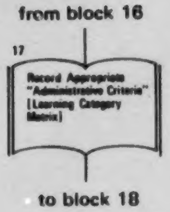
How do I record the appropriate training setting criteria on the matrix?

- **In the first column to the right of the criteria for Selecting Instructional Delivery Systems, you will see empty cells. Place a "√" (light pencil so that it can be easily erased) in the cells representing the training setting criteria that must be met.**
- **For example: (See Learning Category Matrix—Mental Skills, Recalling Information)**
  - **If the instructional setting for the task is "institution," you might check large group at a single location, "or individual trainees at a fixed location."**
  - **If the instructional setting is "SOJT," you might check "team setting" or "small group."**
  - **If the instructional setting is "STEP," you might check "individual trainees with independent instruction at any location."**
  - **If a particular criteria is not stated, it is because that criteria is not a significant factor for this learning category.**

- **Example of matrix with training setting criteria checked:**

Responsive Motor Skills

Criteria for Selecting Instructional Delivery Systems	Directions: Place a "✓" (light pencil) in boxes representing criteria (rows) that must be met.	Alternative Instructional Delivery Systems										
		Delivery Approaches Permitting the Application of All Learning Guidelines and Algorithm								Delivery Approaches NOT Permitting Complete Application of Learning Guidelines and Algorithm		
		Operational System in Laboratory with Tutor	Simulator with Tutor and Tests	Procedures Trainer with Tutor and Tests	Logic Trainer with Tutor	CAI with Photo or Operable Mockup	Teaching Machine with Photo or Operable Mockup	Microfiche w/wo Photo or Operable Mockup	Programmed Text – Branching	Laboratory Carrel with Equipment and Linear Instructional Materials	Operational System in Real Environment with Tutor	Texts, Lectures and Demonstrations
Training Setting Criteria												
• Individual Trainee at Fixed Location	✓	X	X	X	X	X	X	X	X	X	X	X
• Individual Trainee with Independent Instruction at Any Location								X	X			
• Small Group					X							X
• Large Group at Single Location												X
• Team Setting		X	X	X	X						X	
Administrative Criteria												
• Site of Courseware and Special Hardware Development												
Local												
Central		X	Y									
• Magnitude of Acquisition Cost												
Low												
High												
Complex												


from block 16
17
Record Appropriate "Administrative Criteria" [Learning Category Matrix]
to block 18

- A light check mark (√) is made on the matrix to indicate the criteria specified by the instructional management plan for this objective.
- For further guidance, see below.

How do I record the appropriate administrative criteria on the matrix?

- In the same column of empty cells used in the last step, you will place a "√" (light pencil again) in the cells representing the administrative criteria that must be met.
- For example: (See example on page J-20)
  - — If you have very limited funds for delivery systems and all your material must be developed at your school you would check:

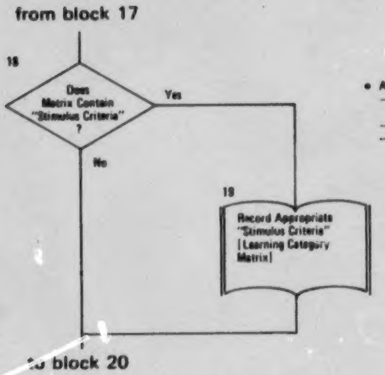
    local - under "Site of Courseware and Special Hardware Development"
    low - under "Magnitude of Acquisition Cost"

NOTE: There should be two checks for administrative criteria.

- **Example of matrix with administrative criteria checked:**

Responsive Motor Skills

Criteria for Selecting Instructional Delivery Systems	Directions Place a "✓" (light pencil) in boxes representing criteria (rows) that must be met.	Alternative Instructional Delivery Systems										
		Delivery Approaches Permitting the Application of All Learning Guidelines and Algorithm								Delivery Approaches NOT Permitting Complete Application of Learning Guidelines and Algorithm		
		Operational System in Laboratory with Tutor	Simulator with Tutor and Tests	Procedures Trainer with Tutor and Tests	Logic Trainer with Tutor	CAI with Photo or Operable Mockup	Teaching Machine with Photo or Operable Mockup	Microfiche w/wo Photo or Operable Mockup	Programmed Text – Branching	Laboratory Carrel with Equipment and Linear Instructional Materials	Operational System in Real Environment with Tutor	Texts, Lectures and Demonstrations
Training Setting Criteria												
• Individual Trainee at Fixed Location		X	X	X	X	X	X	X	X	X	X	X
• Individual Trainee with Independent Instruction at Any Location								X	X			
• Small Group					X							X
• Large Group at Single Location												X
• Team Setting		X	X	X	X						X	
Administrative Criteria												
• Site of Courseware and Special Hardware Development												
Local	✓							X	X	X	X	X
Central		X	X	X	X	X	X	X	X	X	X	
• Magnitude of Acquisition Cost												
Low	✓							X	X	v		
High		X	X	X	X	X	v					
Complexity Criteria												
• Difficult Motor Acts												
• Smoo												


from block 17
18
Does Matrix Contain "Stimulus Criteria" ?
Yes
No
19
Record Appropriate "Stimulus Criteria" [Learning Category Matrix]
to block 20

- All matrices include Stimulus Criteria except:
  - Subcategory Identify Objects and Symbols (Mental Skills)
  - Subcategory Gross Motor Skills (Physical Skills)
  - Subcategory Attitude Learning (Attitude Skills)

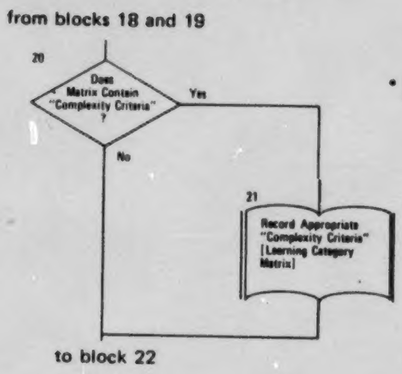
- A light check mark (√) is made on the matrix to indicate the criteria specified by the learning activities for this objective.
- For further guidance, see below.

How do I record the appropriate stimulus criteria?

- In the same column of empty cells used in the last step you will place a "√" (light pencil again) in the cells representing the stimulus criteria that must be met.
- Check the suggested learning activity for this objective. If the activity involves sound alone, consider the choices under audio stimuli. If the activity involves visual stimuli, specify which visuals are needed. For each stimulus criteria applicable to the selected learning activities put a check mark in the empty cell.

- **Example of matrix with stimulus criteria checked:**

Complexity Criteria											
• Difficult Motor Acts											
• Smooth Motor Performance at End of Training		X	X	X							
Stimulus Criteria											
• Visual Form											
Alphanumeric		X	X	X	X	X	X	X	X	X		X
Pictorial, Plane					X	X	X	X	X	X		X
Object, Solid	✓	X	X	X	X					X	X	X
• Visual Movement												
Still	✓				X	X	X	X	X	X		X
Full Movement		X	X	X	X	X				X	X	
• Audio												
Voice Sound Range		X	X	X		X				X	X	X
Full Sound Range		X	X	X						X	X	
Ambient Sounds		X	X	X							X	
• Other												
Tactile Cues		X	X	X						X	X	
Internal Stimulus Motion Cues	✓	X	X	X						X	X	


from blocks 18 and 19
20
Does Matrix Contain "Complexity Criteria" ?
Yes
No
21
Record Appropriate "Complexity Criteria" [Learning Category Matrix]
to block 22

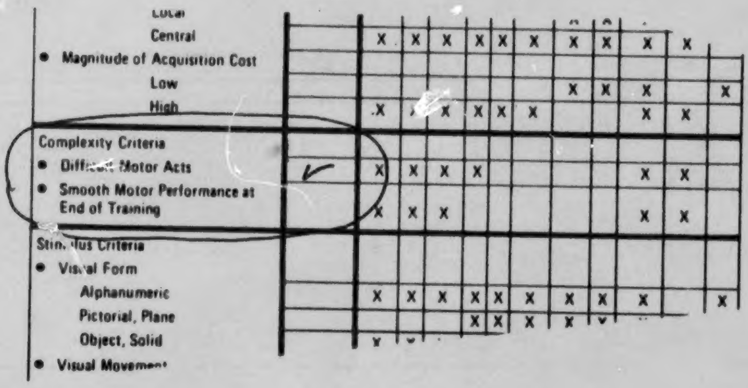
- Complexity Criteria apply only to responsive motor skills.

- A light check mark (√) is made on the matrix to indicate the criteria specified by learning activities for this objective.
- For further guidance, see below

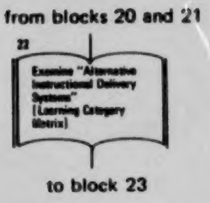
How do I record the appropriate complexity criteria on the matrix?

- In the same column of empty cells used in the last step you will place a "√" (light pencil again) in the cells representing the complexity criteria that must be met. (These criteria apply only to responsive motor skills).
- For example:
  - Read the action statement and check the suggested learning activities. Decide whether this is a "difficult motor act" or whether the goal is "smooth motor performance at the end of training," or both.

- **Example of matrix with complexity criteria checked:**



Local												
Central		X	X	X	X	X	X	X	X	X	X	
• Magnitude of Acquisition Cost												
Low								X	X	X		X
High		X	[illegible]	X	X	X	X			X	X	
Complexity Criteria												
• Difficult Motor Acts	✓	X	X	X	X					X	X	
• Smooth Motor Performance at End of Training		X	X	X						X	X	
Stimulus Criteria												
• Visual Form												
Alphanumeric		X	X	X	X	X	X	X	X	X		X
Pictorial, Plane					X	X	X	X				
Object, Solid		X										
• Visual Movement												


from blocks 20 and 21
22
Examine "Alternative Instructional Delivery Systems" (Learning Category Matrix)
to block 23

- There are two groups of alternative instructional delivery systems: the first group consists of those which meet all the criteria completely; the second group consists of delivery systems which are adequate but do not meet the criteria completely.
- For further explanation of the delivery systems, see Appendix A, pages J-61 thru 70.

What are the alternative instructional delivery systems?

- Look at the matrix for Identifying Objects and Symbols (Mental Skills). The alternative instructional delivery systems for this matrix are shown diagonally. They are:

  — CAI (with visual display)
  — Teaching Machine—Branching
  — Programmed Text—Branching
  —Microfiche with Self-Scoring Tests
  — Study-Card Sets with Self-Scoring Tests
  — Traditional Classroom
  — Textbook
  — Chart
  — Automatic Rater

- Listed below is a complete list of instructional delivery systems that appear in the matrices.

Audio Only Systems
  Audio Disc Playback System
  Audio Tape System

Audio-Visual
  Audio Tape With Printed Material
  Classroom - Traditional
  Filmstrip Projection System With Audio
  Filmstrip Projection System With Audio and Adjunct Equipment
  Motion Picture Projection System - Commercial, 16MM and Super 8MM Films
  Motion Picture Projection System - Low Budget 16MM and Super 8MM Films
  Microform With Information Mapping, and Audio
  Instructional Kit With Instructor
  Instructional Kits for Trainees

- Overhead Projection System With Instructor
- Sound Slide Projection System
- Teaching Machine - Branching, Still Visual With Audio
- Teaching Machine - Branching, Still and Motion Visual With Audio
- Teaching Machine - Branching, With Adjunct Equipment
- Teleconference System
- Television - Cable (CATV)
- Television - Closed Circuit (CCTV) Without Feedback
- Television - Portable Video Tape System
- Carrel - AV Equipped
- Carrel - Laboratory
- Computer Assisted Instruction (CAI)
- Computer Assisted Instruction - PLATO IV Basic Configuration
- Computer Assisted Instruction - PLATO IV, Basic Configuration and Audio
- Computer Assisted Instruction - PLATO IV, Basic Configuration With Adjunct
- Computer Assisted Instruction - PLATO IV Basic Configuration With Adjunct Equipment and Audio
- Computer Managed Instruction (CMI)
- CMI - CAI TICCIT

Computer Simulation

- Computer Simulation - On-Line
- Computer Simulation - Off-Line
- GAME - Computer Simulation, Solitaire, With Visual Display
- Operational Equipment With Manuals
- Operational System - Real Environment
- Operational System - Synthetically Simulated
- Operational System - Synthetically Stimulated
- Procedure Trainer
- Procedure Trainer - Adjunct Displays and Logic
- Simulator
- Simulator - Adjunct Displays and Logic
- Specimen Sets
- Physiological Trainer (Hostile Environment) Visual
- Physiological Trainer (Hostile Environment) Surface and Internal Senses

Visual Only

- Filmstrip Projection System
- Microform With Information Mapping
- Microform With Information Mapping and Adjunct Equipment
- Slide Projector System - 2" x 2"
- Simulation - Paper
- Teaching Machine - Linear, Still Visual
- Teaching Machine - Branching, Still Visual

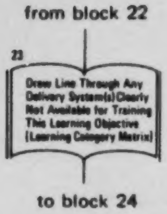
Print Materials

- Case Study Folder
- Flash Cards
- Printed Materials - Handouts
- Printed Materials - Performance Aids
- Printed Materials - Reference Books
- Printed Materials - Self Scoring Exercises
- Printed Material - Workbook
- Printed Material - Textbook
- Programmed Text - Branching
- Programmed Text - Branching With Adjunct Material/Equipment
- Programmed Text - Linear
- Programmed Text - Linear With Adjunct Material/Equipment
- Study Card Sets

Special and Non-Standard Items

- Automatic Raters - Informal Training
- Carrel - Dry
- Do-It-Yourself Kits
- Game-Manual Simulation
- Game - Manual Non-Simulation
- Game - Computer Supported Simulation
- Logic Trainers
- Mockups, Panels, and Demonstrators - Dynamic
- Models and Static Mockups - Small Scale
- Mockups, Panels, and Demonstrators - Static

- Some of the instructional delivery systems listed on the matrices may be unfamiliar to you or different from the terms used by your school. Therefore, a glossary of instructional delivery systems is shown in Appendix A to this Manual (page J-63).


from block 22
23
Draw Line Through Any Delivery System(s) Clearly Not Available for Training This Learning Objective (Learning Category Matrix)
to block 24

- For further guidance, see below.

What is the purpose of drawing a line through unavailable delivery systems?

- Many of the delivery systems included on the matrices will not be available to your school in the foreseeable future. In that case you can eliminate them from your analysis by marking them off on the matrix.

EXAMPLE:

Responsive Motor Skills

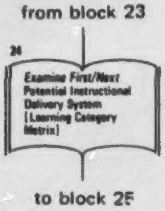
Criteria for Selecting Instructional Delivery Systems	Directions: Place a "√" (light pencil) in boxes representing criteria (rows) that must be met.	Alternative Instructional Delivery Systems									
		Delivery Approaches Permitting the Application of All Learning Guidelines and Algorithm							Delivery Approaches NOT Permitting Complete Application of Learning Guidelines and Algorithm		
		Operational System in Laboratory with Tutor	Simulator with Tutor and Tests	Procedures Trainer with Tutor and Tests	Logic Trainer with Tutor	Teaching Machine with Photo or Operable Mockup	Microfiche w/wo Photo or Operable Mockup	Programmed Text – Branching	Laboratory Carrel with Equipment and Linear Instructional Materials	Operational System in Real Environment with Tutor	Texts, Lectures and Demonstrations
Training Setting Criteria											
• Individual Trainee at Fixed Location		X	X	X	X	X	X	X	X	X	X
• Individual Trainee with Independent Instruction at Any Location							X	X			
• Small Group					X						X
• Large Group at Single Location											X
• Team Setting		X	X	X	X					X	
Administrative Criteria											
• Site of Courseware and Special Hardware Development											
Local							X	X	X	X	X
Central		X	X	X	X	X	X	X	X	X	
• Magnitude of Acquisition Cost											
Low							X	X	X		X
High		X	X	X	X	X			X	X	
Complexity Criteria											
• Difficult Motor Acts		X	X	X	X				X	X	
• Smooth Motor Performance at End of Training		X	X	X					X	X	
Stimulus Criteria											
• Visual Form											
Alphanumeric		X	X	X	X	X	X	X	X		X
Pictorial, Plane					X	X	X	X	X		X
Object, Solid		X	X	X	X				X	X	X
• Visual Movement											
Still					X	X	X	X	X		X
Full Movement		X	X	X	X				X	X	
• Audio											
Voice Sound Range		X	X	X					X	X	X
Full Sound Range		X	X	X					X	X	
Ambient Sounds		X	X	X						X	
• Other											
Tactile Cues		X	X	X					X	X	
Internal Stimulus Motion Cues		X	X	X					X	X	

- You may have had to mark off several of the alternative delivery systems and are now wondering why so many that are presently unavailable were included on the matrix. One reason is to make course development personnel and management more aware of the possibilities.

While the media and delivery systems are usually selected on the basis of equipment availability, local past experience, and available production facilities, there are other important considerations which should be taken into account to make better long range plans. Techniques have been developed for the projection of procurement and revision costs in a wide variety of instructional media. Frequently, there can be a large discrepancy between the projected costs of an existing or available delivery system and one which has been optimally designed.

Large discrepancies of this nature can often serve as the basis for management decisions to embark on a new approach to instruction when it can be shown that the new approach will have important payoffs either in costs, time reductions, or increases in effectiveness. While it may not be cost effective to invest in a new delivery system for a single course of instruction, such an investment may have a significant pay-off over time. Data accumulated through time will provide an important source of information for management in making better long term decisions.

New delivery systems and techniques often become fashionable simply because they are available. In this block, procedures are defined for selecting one or more suitable media for specific learning events and activities. By using this approach, delivery systems can be selected on the basis of defined requirements rather than on the basis of availability or the appeal of currently existing fads.


from block 23
24
Examine First/Next Potential Instructional Delivery System [Learning Category Matrix]
to block 25

- *For further guidance on examining delivery systems for suitability, see below.*

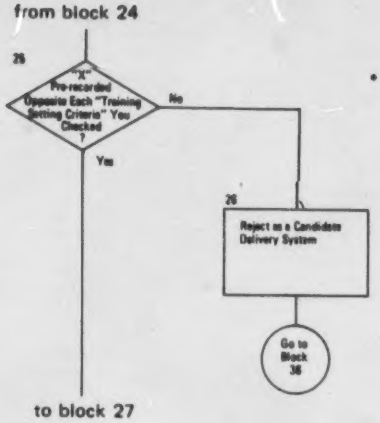
What is the purpose of examining each instructional delivery system or the matrix?

- Now you are ready to use the algorithm which has been set up for you on the matrix. As you look at each delivery system remaining on the matrix you will be noting which ones have X's opposite the criteria you have checked (√) in light pencil.

- The delivery systems which have Xs prerecorded for all or most of the criteria you have checked (√) will become candidate delivery systems. The training setting and administrative requirements will be the same for all learning objectives within a single task, or even a group of tasks, but the stimulus and complexity criteria may change with each objective. It is necessary to note all the X's in the rows next to your checked (√) criteria in order for the algorithm to work correctly.

- Flowchart blocks 24 through 36, which follow, will lead you through the analysis.

NOTE: You are to deal with only one Instructional Delivery system at a time as you work through flowchart blocks 24 through 36

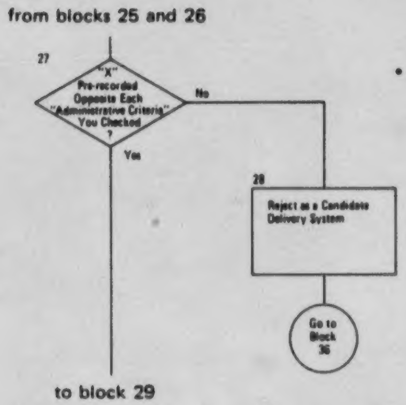

from block 24
26
"X" Pre-recorded Opposite Each "Training Setting Criteria" You Checked ?
No
Yes
26
Reject as a Candidate Delivery System
Go to Block 36
to block 27

• For example, see below

What does the matrix look like when a delivery system meets the training setting criteria?

EXAMPLE:

Criteria for Selecting Instructional Delivery Systems		Operational System in L. with Tutor	Simulator with Tutor and	Procedures Trainer with Tut. and Tests	Logic Trainer with Tutor	CAI with Photo or Operable Mo	Teaching Machine with Photo or Operable Mockup	Microfiche w/wo Photo or Operable Mockup	Programmed Text – Branching	Laboratory Carrel with Equipment and Linear Instructional Materials	Operational System in Real Environment with Tutor	Texts, Lectures and Demonstrations
											..gorithm	
Training Setting Criteria												
• Individual Trainee at Fixed Location	✓	X	X	X	X	X	X	X	X	X	X	X
• Individual Trainee with Independent Instruction at Any Location								X	X			
• Small Group					X							X
• Large Group at Single Location												X
• Team Setting		X	X	X	X						X	
Administrative Criteria												
• Site of Courseware and Special Hardware Development												
Local								X	X	X	X	X
Central		X	X	X	X	X	X	X	X	X	X	
• Magnitude of Acquisition Cost												
Low								X	X	X		X
High		X	X	X	X	X	X			X	X	
Complexity Criteria												
• Difficult Motor Acts		X	X	X	X					X	X	
• Smooth Motor Performance at												

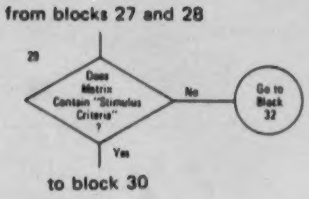

from blocks 25 and 26
27
"X" Pre-recorded Opposite Each "Administrative Criteria" You Checked ?
No
Yes
28
Reject as a Candidate Delivery System
Go to Block 36
to block 29

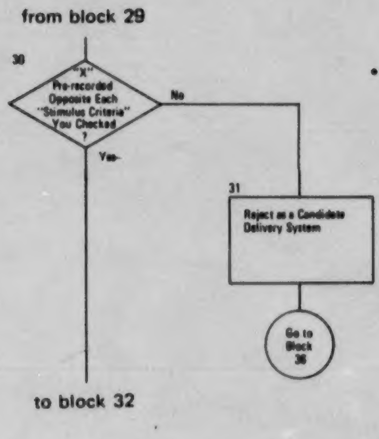
- For example, see below.

What does the matrix look like when a delivery system meets the administrative criteria?

EXAMPLE:

Training Se.												
• Individual Trainee a. Location												
• Individual Trainee with Independent Instruction at Any Location												
• Small Group					X							
• Large Group at Single Location												
• Team Setting		X	X	X	X						X	
Administrative Criteria												
• Site of Courseware and Special Hardware Development												
Local								X	X	X	X	X
Central	✓	X	X	X	X	X	X	X	X	X	X	
• Magnitude of Acquisition Cost												
Low								X	X	X		X
High	✓	X	X	X	X	X	X			X	X	
Complexity Criteria												
• Difficult Motor Acts		X	X	X	X					X	X	
• Smooth Motor Performance at End of Training		X	X	X						X	X	
Stimulus Criteria												
• Visual Form												
Alphanumeric		X	X	X	X	X	X	X	X	X		X
Pictorial, Plane					X	X	X	X	X	X		X
Object, Solid		X	X	X	X					X	X	X
• Visual Movement												
Still					X	X	X	X	X	X		X
Full Movement		X	X	X	X	X				X	X	
• Audio												
Voice Sound Range		X	X	X		X						
Full Sound Range		X	X	v								
Ambient Sounds												
• Other												
T-												


from blocks 27 and 28
29
Does
Matrix
Contain "Stimulus
Criteria"
?
No
Go to
Block
32
Yes
to block 30

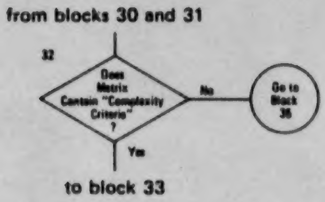

from block 29
30
"X" Pre-recorded Opposite Each "Stimulus Criteria" You Checked ?
No
Yes
31
Reject as a Candidate Delivery System
Go to Block 36
to block 32

• For example, see below.

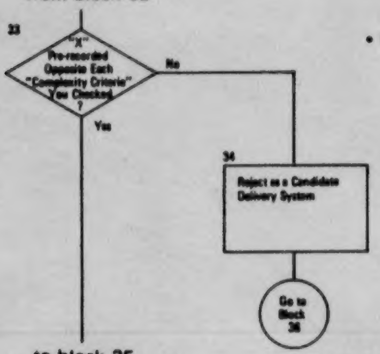
What does the matrix look like when a delivery system meets the stimulus criteria?

EXAMPLE:

								X	X	X	X	X
entral		X	X	X	X	X	X	X	X	X	X	
• Magnitude of Acquisition Cost												
Low								X	X	X		X
High		X	X	X	X	X	X			X	X	
Complexity Criteria												
• Difficult Motor Acts		X	X	X	X					X	X	
• Smooth Motor Performance at End of Training		X	X	X						X	X	
Stimulus Criteria												
• Visual Form												
Alphanumeric	✓	X	X	X	X	X	X	X	X	X		X
Pictorial, Plane					X	X	X	X	X	X		X
Object, Solid		X	X	X	X					X	X	X
• Visual Movement												
Still					X	X	X	X	X	X		X
Full Movement		X	X	X	X	X				X	X	
• Audio												
Voice Sound Range	✓	X	X	X		X				X	X	X
Full Sound Range		X	X	X						X	X	
Ambient Sounds		X	X	X							X	
• Other												
Tactile Cues		X	X	X						X	X	
Internal Stimulus Motion Cues		X	X	X						X	X	


from blocks 30 and 31
32
Does Matrix Contain "Complexity Criteria" ?
No
Go to Block 35
Yes
to block 33

from block 32



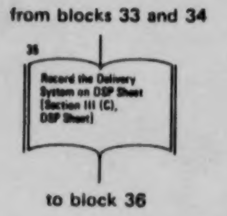
• For example, see below.

to block 35

What does the matrix look like when a delivery system meets the complexity criteria?

EXAMPLE:

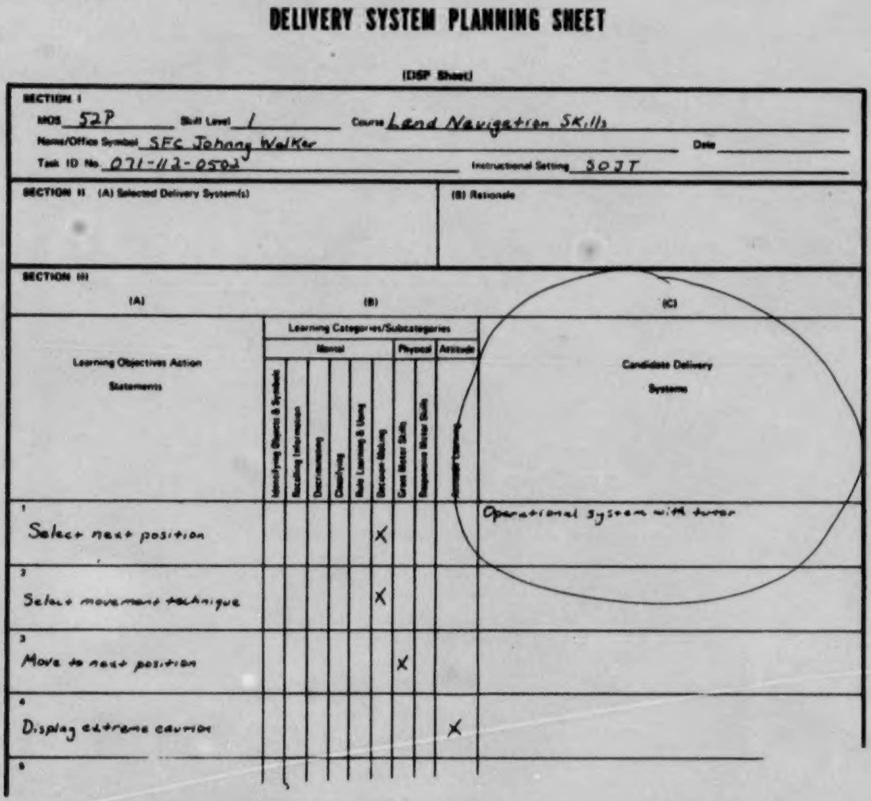
…ng …onal Delivery Systems		Operational S with Tutor	Simulator with	Procedures Train and Tests	Logic Trainer with	CAI with Photo or C	Teaching Machine wi Operable Mockup	Microfiche w/wo Photo Mockup	Programmed Text – Br	Laboratory Carrel with and Linear Instructional	Operational System in Re Environment with Tutor	Texts, Lectures and Demo
Training Setting Criteria												
• Individual Trainee at Fixed Location		X	X	X	X	X	X	X	X	X	X	X
• Individual Trainee with Independent Instruction at Any Location								X	X			
• Small Group					X							X
• Large Group at Single Location												X
• Team Setting		X	X	X	X						X	
Administrative Criteria												
• Site of Courseware and Special Hardware Development												
Local								X	X	X	X	X
Central		X	X	X	X	X	X	X	X	X	X	
• Magnitude of Acquisition Cost												
Low								X	X	X		X
High		X	X	X	X	X	X			X	X	
Complexity Criteria												
• Difficult Motor Acts	✓	X	X	X	X					X	X	
• Smooth Motor Performance at End of Training		X	X	X						X	X	
Stimulus Criteria												
• Visual Form												
Alphanumeric		X	X	X	X	X	X	X	X	X		X
Pictorial, Plane					X	X	X	X	X	X		X
Object, Solid		X	X	X	X					X	X	X
• Visual Movement												
Still					X	X						
Full Movement		X	X									
• Audio												
Voice Sound Re												


from blocks 33 and 34
35
Record the Delivery System on DSP Sheet [Section III (C), DSP Sheet]
to block 36

- For guidance in recording the delivery system on DSP Sheet, see below.

How do I select and record a candidate delivery system?

- You have reached this block because the delivery system you have been examining has an "X" recorded for each criteria you have checked. Therefore this is a candidate delivery system.
- Since it is possible to have more than one delivery system which matches all your criteria, leave space to list one or two others in Section III (C).
- **For Example:**



DELIVERY SYSTEM PLANNING SHEET

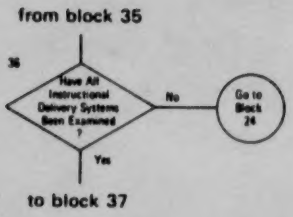
(DSP Sheet)

SECTION I
MOS 52P Skill Level 1 Course Land Navigation Skills
Name/Office Symbol SFC Johnny Walker Date
Task ID No. 071-112-0502 Instructional Setting SOJT

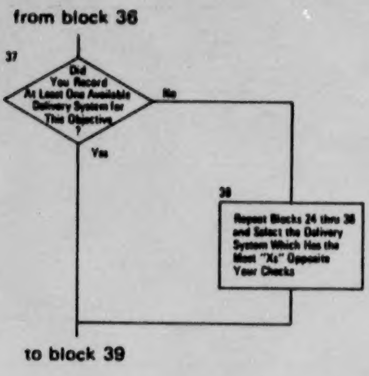
SECTION II (A) Selected Delivery System(s) (B) Rationale

SECTION III

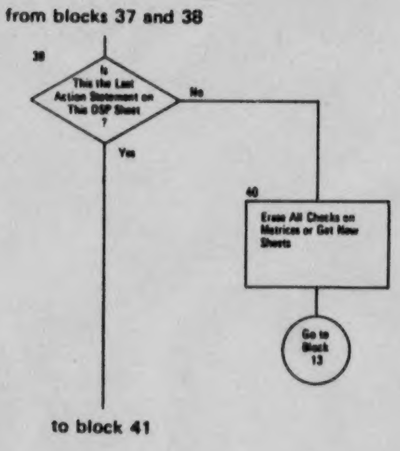
(A)	(B)									(C)
Learning Objectives Action Statements	Learning Categories/Subcategories									Candidate Delivery Systems
	Mental						Physical		Attitude	
	Identifying Objects & Symbols	Recalling Information	Discriminating	Classifying	Rule Learning & Using	Decision Making	Gross Motor Skills	Responsive Motor Skills	Attitude Learning	
1 Select next position						X				Operational system with tutor
2 Select movement technique						X				
3 Move to next position							X			
4 Display extreme caution									X	
5										


from block 35
36
Have All Instructional Delivery Systems Been Examined ?
No
Go to Block 24
Yes
to block 37

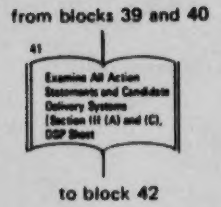
- Are there delivery systems shown under the Alternative Instructional Delivery Systems that have not been examined?


from block 36
37
Did You Record At Least One Available Delivery System for This Objective ?
No
Yes
38
Repeat Blocks 24 thru 36 and Select the Delivery System Which Has the Most "Xs" Opposite Your Checks
to block 39

- This block is included in the event that no available delivery system could be found by using the algorithm. The more delivery systems that were crossed off the list the more likely this is to happen. Then a less than perfect choice must be made.


from blocks 37 and 38
39
Is This the Last Action Statement on This DSP Sheet ?
No
Yes
40
Erase All Checks on Metrices or Get New Sheets
Go to Block 13
to block 41

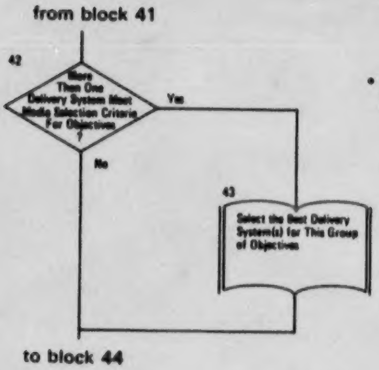
- Metrices are used more than once in order to reduce the amount of paper used with this job aid.


from blocks 39 and 40
41
Examine All Action Statements and Candidate Delivery Systems (Section III (A) and (C), DSP Sheet
to block 42

- For further guidance on the purpose of this examination, see below.

What is the purpose of looking at all the action statements and candidate delivery systems?

- If the learning objectives for this task required a wide variety of learning activities due to belonging to several different learning categories, then you may have many different candidate delivery systems. However, it is not likely that you would use more than two or three delivery systems for a single task; more likely you will be restricted to one. In this case you will have to select the delivery system(s) which appear most frequently among the candidate systems you have listed in Section III C. In this step you are checking to see how many delivery systems are candidates for this one task.


from block 41
42
More Than One Delivery System Meet Media Selection Criteria For Objectives ?
Yes
No
43
Select the Best Delivery System(s) for This Group of Objectives
to block 44

- Does more than one delivery system meet your media selection criteria for this group of objectives?

- For guidance on how to select the best delivery system, see below.

How do I select the best delivery system for this group of objectives?

- Since you have more than one candidate delivery system, you need to make a further analysis to determine which system(s) is most practical in your situation.

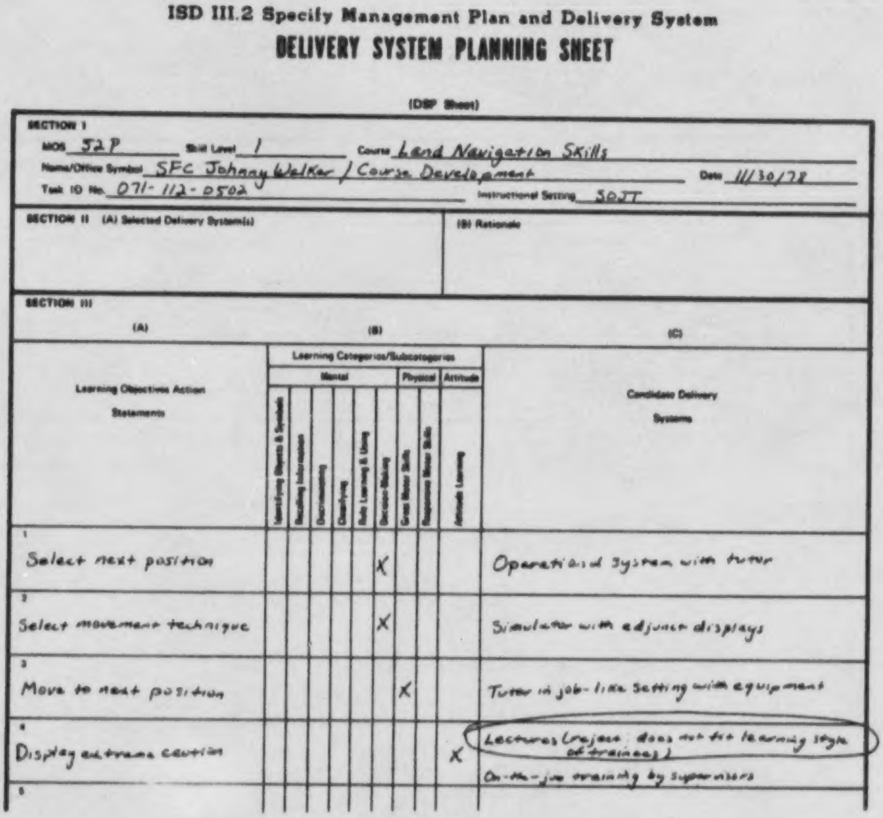
- A delivery system may be rejected as being too impractical for one or more of the following reasons:

1. Marginal Technical Solutions: The learning guidelines cannot be easily carried out with the medium.
2. State-of-the-Art: The basic medium is under development or being tested and may not be available for practical application by the time it is required.
3. Size of System: Some media are useful within large training programs, others are suited only for small programs (and therefore may not be suited to the size program being considered.)
4. Interface with Existing Program: Many new courses must be designed to fit into existing programs, which places constraints on the new courses; e.g., equipment on hand, available classrooms, scheduling practices, etc.
5. Time to Produce Media: Media which require long lead times for development may not be useful when scheduling does not permit a long development cycle.
6. Budget Cycle Constraints: While the application of some of the effective training approaches, such as CCTV (closed circuit television), may result in low costs per student graduate, the initial investment is substantial. Unless these resources appear in existing budgets, the application of these techniques to an immediate problem is not feasible.

7. *Adoption of Innovations:* Project team members frequently resist innovations. If the proposed media is significantly different from existing techniques, either adequate resources must be focused upon gaining acceptance for the innovation, or a more traditional approach must be selected.
8. *Courseware Development:* If the courseware is to be locally developed, skilled personnel, equipment, time, and dollars must be available.
9. *High Cost Alternatives:* The projected life cycle cost of a media approach may be significantly higher than other equally useful alternatives. Reject high cost alternatives.
10. *Learning Style of Trainees:* If trainee has low reading ability or would be limited in his ability to use certain kinds of media, then reject these media as inappropriate.
11. *Other Constraints:* A variety of other practical factors should be considered; e.g., command policy and existing investment in production facilities.

- The delivery systems which you reject may be crossed out in Section III (C). If space permits you may record your rejection rationale for the benefit of your supervisor or other personnel reviewing your analyses.

EXAMPLE:



ISD III.2 Specify Management Plan and Delivery System

DELIVERY SYSTEM PLANNING SHEET

(DSP Sheet)

SECTION I

MOS 52P Skill Level 1 Course Land Navigation Skills

Name/Office Symbol SFC Johnny Walker / Course Development Date 11/30/78

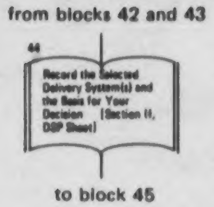
Task ID No. 071-112-0502 Instructional Setting SOJT

SECTION II (A) Selected Delivery System(s) (B) Rationale

SECTION III

(A)	(B)									(C)
	Learning Categories/Subcategories									
	Mental						Physical		Attitude	
Learning Objectives Action Statements	Identifying Objects & Symbols	Recalling Information	Discriminating	Classifying	Rule Learning & Using	Decision-Making	Gross Motor Skills	Responsive Motor Skills	Attitude Learning	Candidate Delivery Systems
1 Select next position						X				Operational system with tutor
2 Select movement technique						X				Simulator with adjunct displays
3 Move to next position							X			Tutor in job-like setting with equipment
4 Display extreme caution									X	Lectures (reject: does not fit learning style of trainees) On-the-job training by supervisors
5										

J-43

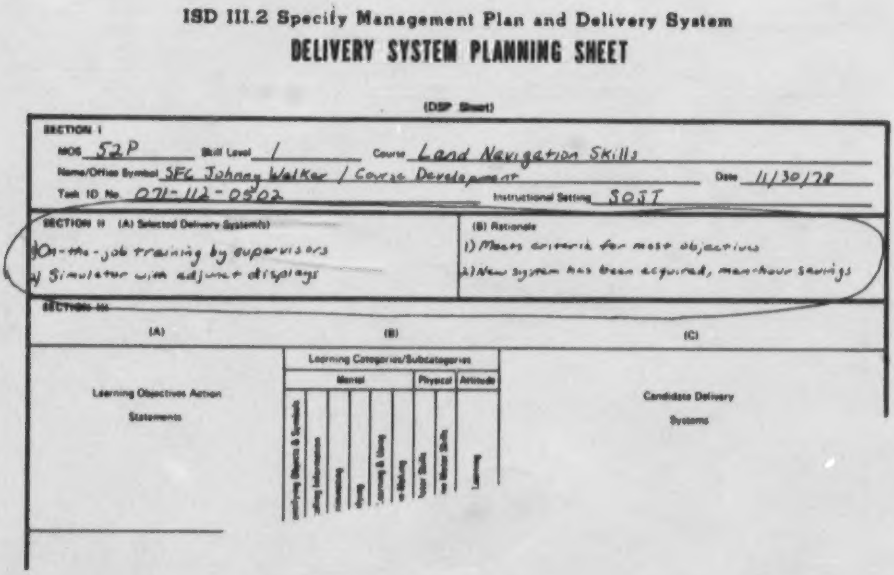

from blocks 42 and 43
44
Record the Selected Delivery System(s) and the Basis for Your Decision (Section II, DSP Sheet)
to block 45

- For further guidance and example, see below.

How do I record the selected delivery system and basis for my decision?

- Space has been provided in Section II (A) for the delivery system(s) selected for presenting the instruction for this task.
- Space has been provided in Section II (B) for your rationale.

EXAMPLE:



ISD III.2 Specify Management Plan and Delivery System

DELIVERY SYSTEM PLANNING SHEET

(DSP Sheet)

SECTION I

MOS 52P Skill Level 1 Course Land Navigation Skills

Name/Office Symbol SFC Johnny Walker / Course Development Date 11/30/78

Task ID No. 071-112-0502 Instructional Setting SOJT

SECTION II (A) Selected Delivery System(s)

1) On-the-job training by supervisors

2) Simulator with adjunct displays

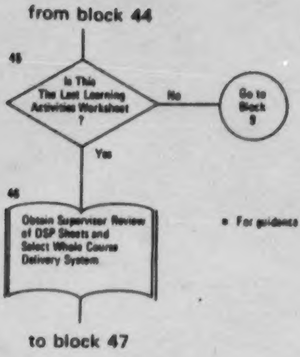
(B) Rationale

1) Meets criteria for most objectives

2) New system has been acquired, man-hour savings

SECTION III

(A)	(B)	(C)
Learning Objectives Action Statements	Learning Categories/Subcategories Mental / Physical / Attitude	Candidate Delivery Systems


from block 44
45
Is This The Last Learning Activities Worksheet ?
No
Go to Block 9
Yes
46
Obtain Supervisor Review of DSP Sheets and Select Whole Course Delivery System
to block 47

- For guidance in determining the whole course delivery system, see below.

How is the whole course delivery system selected?

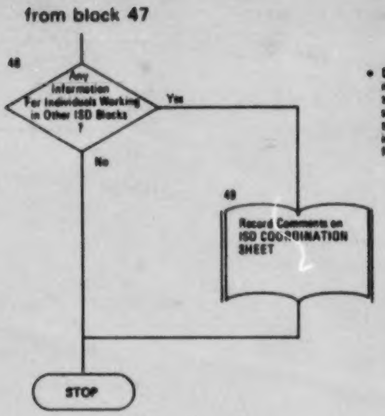
- Having completed this detailed analysis for every objective of every task, you have arrived at the most technically correct and practical decisions.
- After your supervisor becomes familiar with the instructional delivery systems you have selected and your rationale, he can consult with management. Ideally, your selections would become final; however, the final choice will be based on a cost analysis and certain administrative factors, irrespective of the technically correct solutions.
- Your goal has been achieved when you make the technically correct solutions. After management becomes aware of them it becomes their responsibility to make more of the alternatives available in the future.

from block 46
47
Complete Systems Management Plan
to block 48

- This job aid does not include guidance for completing the Systems Management Plan (SMP)
- For information about what is included in the SMP and where to obtain guidance, see below.

What is the System Management Plan?

- The System Management Plan provides details of system decisions on how the instruction will be developed and implemented. It includes:
  - a) Instructional Management Plan (See example in TRADOC Pam 350-30, III.2, pp. 146 through 161).
  - b) Plan for developing instruction.
  - c) Plan for evaluating the system.
- For more information refer to TRADOC Pam 350-30, III.2, Specify Instructional Management Plan and Delivery System.


from block 47
48
Any Information For Individuals Working in Other ISD Blocks ?
Yes
No
49
Record Comments on ISD COORDINATION SHEET
STOP

- During the delivery system selection process information may have been obtained that would be useful to persons who performed activities that fed into this step. Similarly, information may have been obtained that would be useful to persons who will be engaged in Instructional Systems Development steps that follow this one.

- Comments are recorded and submitted to appropriate persons.
- For further guidance, see below.

What is the importance of preparing comments for people working in other steps of the instructional systems development process? How do I record them?

- In order for the Instructional Systems Development process to work effectively it is imperative that there be forward and backward communication between the people involved in the process. At some time or other you have probably complained about the input that has been provided to you. Sometimes, you may have had to do work that should have been performed in previous steps.

> **IT IS IMPORTANT THAT YOU FEED THIS INFORMATION BACK TO THE APPROPRIATE PEOPLE SO THAT REVISIONS CAN BE MADE TO EFFECT IMPROVEMENT IN THE END PRODUCT.**

- In your research for this step of the Instructional Systems Development process you may have discovered additional information that you think may be useful to people who will be working in steps that follow this one. If so, it is equally important that you pass this information on to appropriate people.

> **REMEMBER, COMMUNICATION WITHIN THE INSTRUCTIONAL SYSTEMS DEVELOPMENT PROCESS IS CRITICAL FOR EFFECTIVE INSTRUCTIONAL DEVELOPMENT**

- A copy of the ISD COORDINATION SHEET can be found in the back of this manual. Make sufficient copies to enable you to send one to every individual you wish to communicate with—plus copies for your records.
- Complete the ISD COORDINATION SHEET in duplicate. Send one copy to the individual and attach one copy to the package of DSP Sheets.

SAMPLE DSP SHEET (front)

ISD III.2 Specify Management Plan and Delivery System

DELIVERY SYSTEM PLANNING SHEET

(DSP Sheet)

SECTION I

MOS 52P Skill Level 1 Course Land Navigation Skills

Name/Office Symbol SFC Johnny Walker / Course Development Date 11/30/78

Task ID No. 071-112-0502 Instructional Setting SOJT

SECTION II (A) Selected Delivery System(s)

1) On-the-job training by supervisors

2) Simulator with adjunct displays

(B) Rationale

1) Meets criteria for most objectives

2) New system has been acquired, man-hour savings

SECTION III

(A)	(B)									(C)
Learning Objectives Action Statements	Learning Categories/Subcategories									Candidate Delivery Systems
	Mental						Physical		Attitude	
	Identifying Objects & Symbols	Recalling Information	Discriminating	Classifying	Rule Learning & Using	Decision Making	Gross Motor Skills	Responsive Motor Skills	Attitude Learning	
1 Select next position						X				Operational system with tutor
2 Select movement technique						X				Simulator with adjunct displays
3 Move to next position							X			Tutor in job-like setting with equipment
4 Display extreme caution									X	~~Lectures~~ (reject-does not fit learning style) On-the-job training by supervisors
5										
6										
7										
8										
9										
10										
11										
12										
13										

SAMPLE DSP SHEET (back)

SECTION III (Continued) (A)	(B)									(C)
Learning Objectives Action Statements	Learning Categories/Subcategories									Candidate Delivery Systems
	Mental						Physical		Attitude	
	Identifying Objects & Symbols	Recalling Information	Discriminating	Classifying	Rule Learning & Using	Decision Making	Gross Motor Skills	Responsive Motor Skills	Attitude Learning	
14										
15										
16										
17										
18										
19										
20										
21										
22										
23										
24										
25										
26										
27										
28										
29										
30										

LEARNING CATEGORY MATRIX—MENTAL SKILLS

Identifying Objects and Symbols

Criteria for Selecting Instructional Delivery Systems	Directions: Place a "√" (light pencil) in boxes representing criteria (rows) that must be met.	Alternative Instructional Delivery Systems								
		Delivery Approaches Permitting the Application of All Learning Guidelines and Algorithm					Delivery Approaches NOT Permitting Complete Application of Learning Guidelines and Algorithm			
		CAI (with Visual Display)	Teaching Machine – Branching	Programmed Text – Branching	Microfiche with Self-Scoring Tests	Study-Card Sets with Self-Scoring Tests	Traditional Classroom	Textbook	Chart	Automatic Rater
Training Setting Criteria										
• **Individual Trainee at a Fixed Location**		X	X	X	X	X		X	X	X
• **Individual Trainee with Independent Instruction at Any Location**				X	X	X		X	X	
Administrative Criteria										
• **Site of Courseware and Special Hardware Development**										
Local				X	X	X	X	X	X	X
Central		X	X	X	X	X		X	X	X
• **Magnitude of Acquisition Cost**										
Low				X	X	X	X	X	X	X
High		X	X							

LEARNING CATEGORY MATRIX—MENTAL SKILLS

Recalling Information

Directions:

Place a "√" (light pencil) in boxes representing criteria (rows) that must be met.

Criteria for Selecting Instructional Delivery Systems		Alternative Instructional Delivery Systems								
		Delivery Approaches Permitting the Application of All Learning Guidelines and Algorithm					Delivery Approaches NOT Permitting Complete Application of Learning Guidelines and Algorithm			
		CAI	Teaching Machine – Branching	Microfiche with Self-Scoring Tests	Programmed Text – Branching with Self-Scoring Tests	Audio Visual Carrel with Program Texts, AV Modules and Self-Scoring Tests	Traditional Classroom with Instructor, Overhead Projector, Texts, and Paper and Pencil Tests	Independent Study Using Textbooks, Handbooks, Tests and Workbooks	Instructional Television Broadcast or CCTV Without Feedback, Tests	Programmed Text – Linear with Instructor Scored Criterion Test
Training Setting Criteria										
• Individual Trainees at Fixed Location		X	X	X	X	X	X		X	X
• Individual Trainees with Simultaneous Instruction at Many Locations									X	
• Individual Trainees with Independent Instruction at Any Location				X	X			X		X
• Small Group							X		X	
• Large Group at a Single Location							X		X	
• Team Setting										
Administrative Criteria										
• Site of Courseware and Special Hardware Development										
Local				X	X	X	X	X		X
Central		X	X	X	X	X		X	X	X
• Magnitude of Acquisition Cost										
Low				X	X		X	X		X
High		X	X			X			X	
Stimulus Criteria										
• Visual Movement										
Limited		X	X			X			X	
Full		X				X			X	
• Visual Spectrum										
Full Color		X	X	X		X	X	X	X	
• Audio										
Voice Sound Range		X	X			X	X		X	
Full Sound Range						X				

LEARNING CATEGORY MATRIX–MENTAL SKILLS

Discriminating

Criteria for Selecting Instructional Delivery Systems	Directions: Place a "√" (light pencil) in boxes representing criteria (rows) that must be met.	Alternative Instructional Delivery Systems						
		Delivery Approaches Permitting the Application of All Learning Guidelines and Algorithm					Delivery Approaches NOT Permitting Complete Application of Learning Guidelines and Algorithm	
		Operational System with Simulated Signals, and an Instructor with Instructor Handbook	Simulator with Instructor and Instructor Handbook	Simulator with Adjunct Displays and Logic	Procedure Trainer, with Instructor and Instructor Handbook	Procedure Trainer with Adjunct Displays and Logic	Operational System with Instructor	Informal On-the-Job Training on Operational System
Training Setting Criteria								
• **Individual Trainee at Fixed Location (School)**		X	X	X	X	X	X	
• **Individual Trainee On-the-Job**		X					X	X
Administrative Criteria								
• **Site of Courseware and Special Hardware Development**								
Local							X	X
Central		X	X	X	X	X		
• **Magnitude of Acquisition Cost**								
Low								X
High		X	X	X	X	X	X	
Stimulus Criteria								
• **Full Visual Environment**		X					X	X
• **Full Ambient Sounds**		X	X	X			X	X
• **External Stimulus Motion Cues**		X	X	X			X	X

LEARNING CATEGORY MATRIX–MENTAL SKILLS

Classifying

Directions:

Place a "√" (light pencil) in boxes representing criteria (rows) that must be met.

Criteria for Selecting Instructional Delivery Systems		Alternative Instructional Delivery Systems									
		Delivery Approaches Permitting the Application of All Learning Guidelines and Algorithm					Delivery Approaches NOT Permitting Complete Application of Learning Guidelines and Algorithm				
		CAI with Adjunct Equipment and Materials	Study Card Sets	Microfiche	Teaching Machine – Branching	Simulator with Adjunct Displays or Instructor	Slide Sets with Instructor	Traditional Classroom with AV Materials	Audio Recorders – Disc or Tape	Specimen Set	Sound Slide/Film Strip Program
Training Setting Criteria											
• **Individual Trainee at a Fixed Location**		X	X	X	X	X	X		X	X	X
• **Individual Trainee with Independent Instruction at Any Location**			X	X					X		X
• **Small Group**							X	X	X		X
• **Large Group at Single Location**							X	X	X		X
Administrative Criteria											
• **Site of Courseware and Special Hardware Development**											
Local			X	X	X		X	X	X	X	X
Central		X	X	X	X	X	X	X	X	X	X
• **Magnitude of Acquisition Cost**											
Low			X	X			X	X	X	X	X
High		X			X	X					
Stimulus Criteria											
• **Visual Form**											
Alphanumeric		X	X	X	X	X	X	X			X
Pictorial, Plane		X	X	X	X		X	X			X
Line Construction, Plane		X	X	X	X		X	X			X
Object, Solid						X				X	
Environment						X					
• **Visual Movement**											
Still		X	X	X	X		X	X		X	X
Limited		X			X			X			X
Full						X		X			
• **Scale**											
Exact Scale						X				X	
• **Audio**											
Voice Sound Range		X			X	X	X	X	X		X
Full Sound Range						X			X		
Ambient Sounds						X					
Other Tactile Cues						X				X	
Internal Stimulus Motion Cues						X					
External Stimulus Motion Cues						X					

LEARNING CATEGORY MATRIX–MENTAL SKILLS

LEARNING CATEGORY MATRICES

Rule Learning and Using

Criteria for Selecting Instructional Delivery Systems	Directions: Place a "√" (light pencil) in boxes representing criteria (rows) that must be met.	Alternative Instructional Delivery Systems								
		Delivery Approaches Permitting the Application of All Learning Guidelines and Algorithm							Delivery Approaches NOT Permitting Complete Application of Learning Guidelines and Algorithm	
		Operational Equipment with Instructor and Instructor Handbook	Simulator with Instructor and Instructor Handbook	Procedure Trainer with Instructor and Instructor Handbook	Computer Assisted Instruction	Teaching Machine – Branching	Programmed Text – Branching	Microfiche with Self-Scoring Tests	Traditional Classroom	Programmed Instruction – Linear
Training Setting Criteria										
• Individual Trainee at Fixed Location		X	X	X	X	X	X	X	X	X
• Individual Trainee with Independent Instruction at Any Location							X	X		X
• Small Group									X	
• Large Group at a Single Location									X	
Administrative Criteria										
• Site of Courseware and Special Hardware Development										
Local							X	X	X	X
Central		X	X	X	X	X	X	X		X
• Magnitude of Acquisition Cost										
Low				X		X	X	X	X	X
High		X	X	X	X	X				
Stimulus Criteria										
• Visual Form										
Pictorial, Plane					X	X	X	X	X	X
Line Construction, Plane					X	X	X	X	X	X
Object, Solid		X	X	X					X	
Environment		X	X	X						
• Visual Movement										
Limited			X	X	X	X			X	
Full		X	X	X	X					
• Visual Spectrum										
Gray Scale					X	X	X	X	X	X
Color		X	X	X	X	X		X	X	
• Audio										
Voice Sound Range		X	X	X	X	X			X	
Full Sound Range		X	X	X						
Ambient Sounds		X	X							
• Other										
Tactile Cues		X	X	X						
Internal Stimulus Motion Cues		X	X	X						
External Stimulus Motion Cues		X	X							

LEARNING CATEGORY MATRIX–MENTAL SKILLS

Decision Making

Directions:

Place a "√" (light pencil) in boxes representing criteria (rows) that must be met.

Criteria for Selecting Instructional Delivery Systems		Alternative Instructional Delivery Systems								
		Delivery Approaches Permitting the Application of All Learning Guidelines and Algorithm						Delivery Approaches NOT Permitting Complete Application of Learning Guidelines and Algorithm		
		Simulator Diagnostic Tests with Instructor	Manual Simulation Game with Diagnostic Tests and Instructor	CAI with Adjunct Equipment and Materials	Teaching Machine – Branching	Microfiche with Self-Scoring Tests	Programmed Text – Branching with Self-Scoring Tests	Operational System with Tutor	Case Study Materials w/wo Instructor	Role Playing Materials with Instructor
Training Setting Criteria										
• **Individual Trainee at Fixed Location**		X	X	X	X	X	X	X	X	
• **Independent Trainee with Independent Instruction at Any Location**						X	X			
• **Small Group**								X	X	X
• **Team Setting**		X	X					X		X
Administrative Criteria										
• **Site of Courseware and Special Hardware Development**										
Local			X			X	X		X	X
Central		X	X	X	X	X	X	X	X	X
• **Magnitude of Acquisition Cost**										
Low			X			X	X		X	X
High		X		X	X			X	X	X
Stimulus Criteria										
• **Visual Form**										
Alphanumeric			X	X	X	X	X		X	X
Pictorial, Plane			X	X	X	X	X		X	X
Object, Solid		X						X		X
• **Visual Movement**										
Still			X	X	X	X	X		X	
Full Movement		X		X				X		
• **Audio**										
Voice Sound Range		X	X	X	X			X		X
Full Sound Range		X						X		
• **Other**										
Tactile Cues		X						X		
External Stimulus Motion Cues		X						X		

LEARNING CATEGORY MATRIX–PHYSICAL SKILLS

Gross Motor Skills

Criteria for Selecting Instructional Delivery Systems	Directions: Place a "√" (light pencil) in boxes representing criteria (rows) that must be met.	Alternative Instructional Delivery Systems			
		Delivery Approaches Permitting the Application of All Learning Guidelines and Algorithm		Delivery Approaches NOT Permitting Complete Application of Learning Guidelines and Algorithm	
		Tutor in a Job-Like Setting With Equipment, if Required, an Instructor Handbook and Student Diagnostic Tests	Tutor in a Job-Like Setting with Equipment, if Required, an Instructor Handbook, Student Diagnostic Tests, and Portable TV with a Record/Playback Capability and a Series of Taped Demonstrations	Programmed Text – Branching and a Series of Film Loops with Equipment, if Required, and a Part-Time Instructor with Criterion Tests	Supervisor Managed Informal On-The-Job Training
Training Setting Criteria					
• **Individual Trainee at a Fixed Location**		X	X	X	
• **Individual Trainee with Independent Instruction at Many Locations**				X	X
• **Small Group**					X
• **Team Setting**		X	X		X
Administrative Criteria					
• **Site of Courseware Development**					
Local		X	X	X	X
Central		X	X	X	

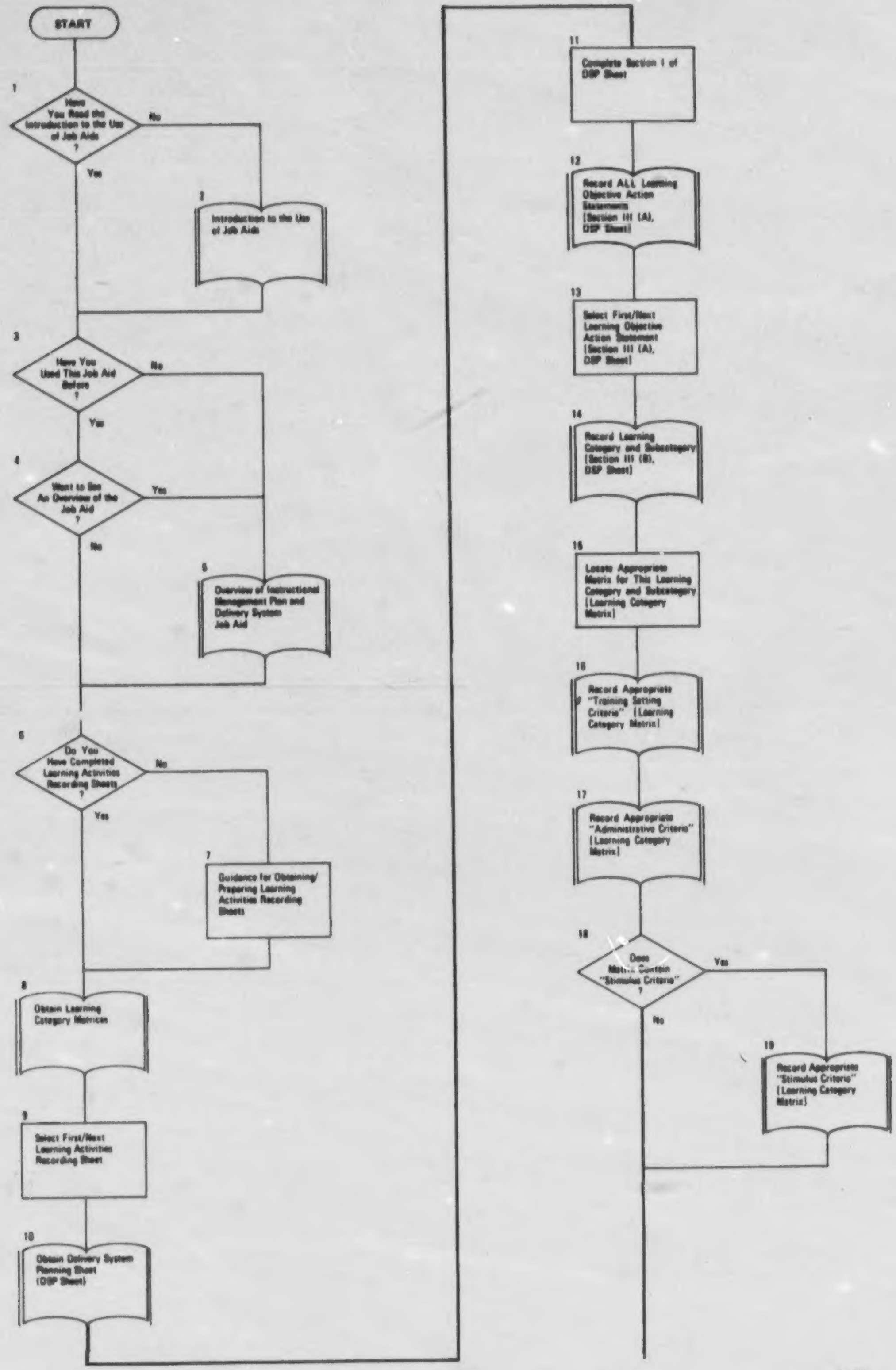
LEARNING CATEGORY MATRIX—PHYSICAL SKILLS

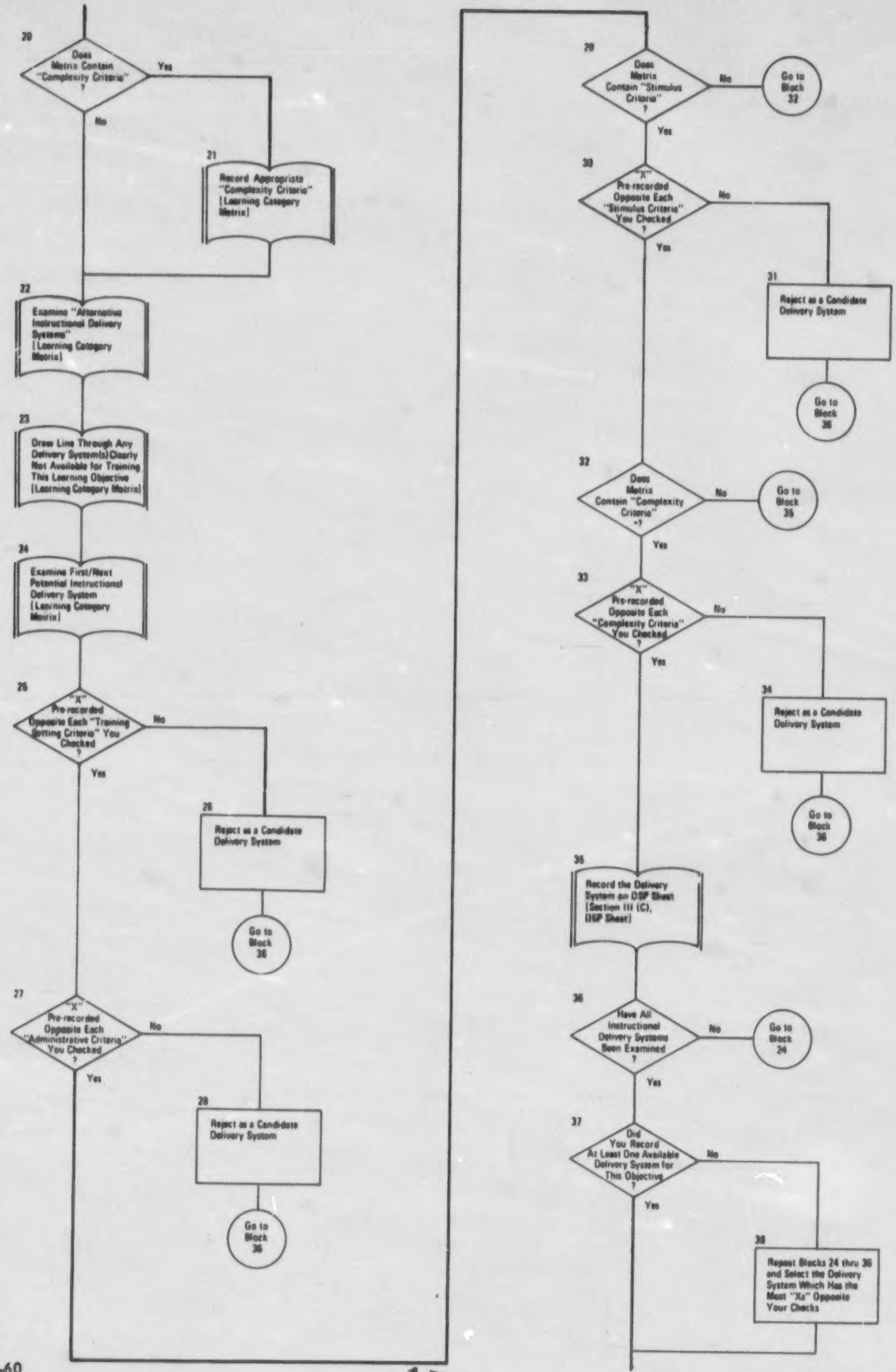
Responsive Motor Skills

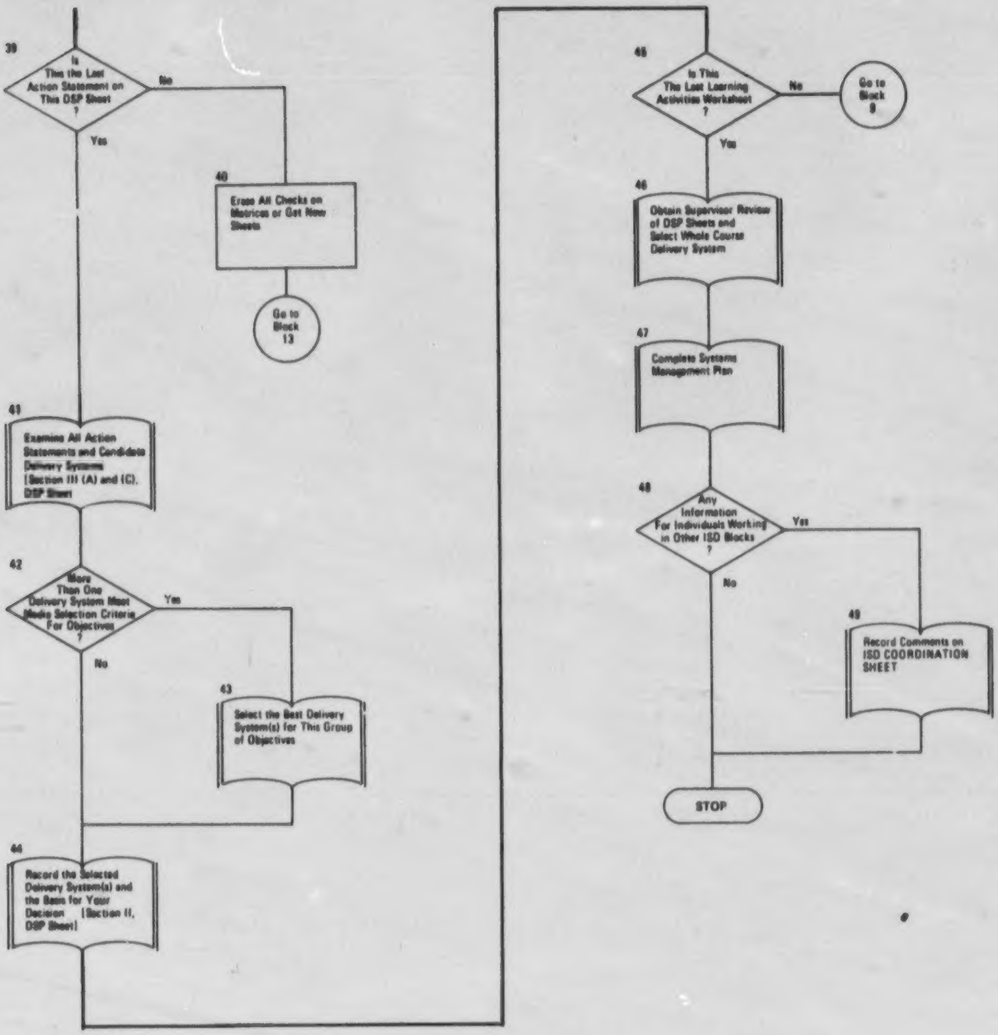
Criteria for Selecting Instructional Delivery Systems	Directions: Place a "√" (light pencil) in boxes representing criteria (rows) that must be met.	Alternative Instructional Delivery Systems										
		Delivery Approaches Permitting the Application of All Learning Guidelines and Algorithm								Delivery Approaches NOT Permitting Complete Application of Learning Guidelines and Algorithm		
		Operational System in Laboratory with Tutor	Simulator with Tutor and Tests	Procedures Trainer with Tutor and Tests	Logic Trainer with Tutor	CAI with Photo or Operable Mockup	Teaching Machine with Photo or Operable Mockup	Microfiche w/wo Photo or Operable Mockup	Programmed Text – Branching	Laboratory Carrel with Equipment and Linear Instructional Materials	Operational System in Real Environment with Tutor	Texts, Lectures and Demonstrations
Training Setting Criteria												
• **Individual Trainee at Fixed Location**		X	X	X	X	X	X	X	X	X	X	X
• **Individual Trainee with Independent Instruction at Any Location**								X	X			
• **Small Group**					X							X
• **Large Group at Single Location**												X
• **Team Setting**		X	X	X	X						X	
Administrative Criteria												
• **Site of Courseware and Special Hardware Development**												
Local								X	X	X	X	X
Central		X	X	X	X	X	X	X	X	X	X	
• **Magnitude of Acquisition Cost**												
Low								X	X	X		X
High		X	X	X	X	X	X			X	X	
Complexity Criteria												
• **Difficult Motor Acts**		X	X	X	X					X	X	
• **Smooth Motor Performance at End of Training**		X	X	X						X	X	
Stimulus Criteria												
• **Visual Form**												
Alphanumeric		X	X	X	X	X	X	X	X	X		X
Pictorial, Plane					X	X	X	X	X	X		X
Object, Solid		X	X	X	X					X	X	X
• **Visual Movement**												
Still					X	X	X	X	X	X		X
Full Movement		X	X	X	X	X				X	X	
• **Audio**												
Voice Sound Range		X	X	X		X				X	X	X
Full Sound Range		X	X	X						X	X	
Ambient Sounds		X	X	X							X	
• **Other**												
Tactile Cues		X	X	X						X	X	
Internal Stimulus Motion Cues		X	X	X						X	X	

Attitude Learning

Criteria for Selecting Instructional Delivery Systems	Directions: Place a "√" (light pencil) in boxes representing criteria (rows) that must be met.	Alternative Instructional Delivery Systems					
		Delivery Approaches Permitting the Application of All Learning Guidelines and Algorithm		Delivery Approaches NOT Permitting Complete Application of Learning Guidelines and Algorithm			
		Operational Job Setting with Instructor and Instructor Handbook with Diagnostic Attitude Tests	Simulated Job Setting with Instructor and Instructor Handbook with Diagnostic Attitude Tests	Role Playing	Case Studies	On-The-Job Training by Supervisors	Lectures, Seminars, etc.
Training Setting Criteria							
• **Individual Trainee at Fixed Location**		X	X		X		
• **Individual Trainee with Independent Instruction at Many Locations**						X	X
• **Small Group**		X	X	X	X	X	X
• **Team Setting**		X	X	X	X	X	X
Administrative Criteria							
• **Site of Courseware Development**							
Local		X		X	X	X	X
Central		X	X	X	X		
• **Magnitude of Acquisition Cost**							
Low				X	X	X	X
High		X	X				


START
1
Have You Read the Introduction to the Use of Job Aids ?
No
Yes
2
Introduction to the Use of Job Aids
3
Have You Used This Job Aid Before ?
No
Yes
4
Want to See An Overview of the Job Aid ?
Yes
No
5
Overview of Instructional Management Plan and Delivery System Job Aid
6
Do You Have Completed Learning Activities Recording Sheets ?
No
Yes
7
Guidance for Obtaining/Preparing Learning Activities Recording Sheets
8
Obtain Learning Category Matrices
9
Select First/Next Learning Activities Recording Sheet
10
Obtain Delivery System Planning Sheet (DSP Sheet)
11
Complete Section I of DSP Sheet
12
Record ALL Learning Objective Action Statements [Section III (A), DSP Sheet]
13
Select First/Next Learning Objective Action Statement [Section III (A), DSP Sheet]
14
Record Learning Category and Subcategory [Section III (B), DSP Sheet]
15
Locate Appropriate Matrix for This Learning Category and Subcategory [Learning Category Matrix]
16
Record Appropriate "Training Setting Criteria" [Learning Category Matrix]
17
Record Appropriate "Administrative Criteria" [Learning Category Matrix]
18
Does Matrix Contain "Stimulus Criteria" ?
Yes
No
19
Record Appropriate "Stimulus Criteria" [Learning Category Matrix]


20
Does Matrix Contain "Complexity Criteria" ?
Yes
No
21
Record Appropriate "Complexity Criteria" [Learning Category Matrix]
22
Examine "Alternative Instructional Delivery Systems" [Learning Category Matrix]
23
Draw Line Through Any Delivery System(s) Clearly Not Available for Training This Learning Objective [Learning Category Matrix]
24
Examine First/Next Potential Instructional Delivery System [Learning Category Matrix]
25
"X" Pre-recorded Opposite Each "Training Setting Criteria" You Checked ?
No
Yes
26
Reject as a Candidate Delivery System
Go to Block 36
27
"X" Pre-recorded Opposite Each "Administrative Criteria" You Checked ?
No
Yes
28
Reject as a Candidate Delivery System
Go to Block 36
29
Does Matrix Contain "Stimulus Criteria" ?
No
Go to Block 32
Yes
30
"X" Pre-recorded Opposite Each "Stimulus Criteria" You Checked ?
No
Yes
31
Reject as a Candidate Delivery System
Go to Block 36
32
Does Matrix Contain "Complexity Criteria" "?
No
Go to Block 35
Yes
33
"X" Pre-recorded Opposite Each "Complexity Criteria" You Checked ?
No
Yes
34
Reject as a Candidate Delivery System
Go to Block 36
35
Record the Delivery System on DSP Sheet [Section III (C), DSP Sheet]
36
Have All Instructional Delivery Systems Been Examined ?
No
Go to Block 24
Yes
37
Did You Record At Least One Available Delivery System for This Objective ?
No
Yes
38
Repeat Blocks 24 thru 36 and Select the Delivery System Which Has the Most "Xs" Opposite Your Checks


39
Is This the Last Action Statement on This DSP Sheet ?
No
Yes
40
Erase All Checks on Matrices or Get New Sheets
Go to Block 13
41
Examine All Action Statements and Candidate Delivery Systems [Section III (A) and (C), DSP Sheet
42
More Than One Delivery System Meet Media Selection Criteria For Objectives ?
Yes
No
43
Select the Best Delivery System(s) for This Group of Objectives
44
Record the Selected Delivery System(s) and the Basis for Your Decision [Section II, DSP Sheet]
45
Is This The Last Learning Activities Worksheet ?
No
Go to Block 9
Yes
46
Obtain Supervisor Review of DSP Sheets and Select Whole Course Delivery System
47
Complete Systems Management Plan
48
Any Information For Individuals Working in Other ISD Blocks ?
Yes
No
49
Record Comments on ISD COORDINATION SHEET
STOP

Appendix A

GLOSSARY OF INSTRUCTIONAL DELIVERY SYSTEMS

Audio Only Systems

Audio Disc Playback System - An audio system that uses a record player and sound recorded on a disc (record) that may be played back upon request by a listener.

Audio Tape System - An audio system that uses a tape recorder/reproducer to record sound on magnetic tape that may be played back upon request by a listener. (Reel to reel, cartridge, cassette).

Audio-Visual

Audio Tape With Printed Material - An audio system that uses a tape recorder/reproducer to record sound on magnetic tape that may be played back upon request. Printed materials such as texts, worksheets, PI, schematics, test materials, etc., used with audio tapes offer a variety of training applications.

Classroom - Traditional - A classroom designed and equipped for an instructor to lecture, lead group discussions, conduct paper and pencil tests and use instructor controlled audio-visual aids.

Filmstrip Projection System With Audio - A sound filmstrip projector represents a family of audio-visual devices using single frame visual filmstrips with sound on magnetic tape or records. Visuals and sound may be manually or automatically synchronized, or be completely independent of one another. Commercial equipment options include front or rear screen projection, remote and stop action capability, and cartridge loading models.

Filmstrip Projection System With Audio and Adjunct Equipment - A system for presenting information via a filmstrip projector and synchronized audio tape or film sound track. The use of adjunct equipment with the AV media provides the capability for a variety of "hands-on" training tasks to be performed.

Motion Picture Projection System - Commercial, 16MM and Super 8MM Films - A motion picture projection system implying the use of professionally prepared commercial 16mm or S-8mm sound motion picture films for training. Appropriate 16mm or S-8mm projector and projection screen are included.

Motion Picture Projection System - Low Budget 16MM and Super 8MM Films - A motion picture projection system implying the use of locally produced sound motion picture films for training. Such films are acceptable for training, but often lack the professional quality of commercial films. Appropriate 16mm or S-8mm projector and projection screen are included.

Microform With Information Mapping, and Audio - The theoretical configuration of a training system to support individualized instruction composed of microimagery in an information map format, a microform projector, an audio tape in a cassette and an audio cassette playback unit.

Instructional Kit With Instructor - A teaching kit designed for specific subject area instructional support. Kit allows the instructor to use a varied or multi-level teaching strategy approach to instruction by including appropriate visual aids, audio tapes, models, charts, demonstrators, reference and test materials.

Instructional Kits for Trainees - A modular instructional kit designed for students that contains all materials required for a segment of instruction. Kit may contain programmed instruction, audio visual materials, tools, materials, typical samples, reference materials, and testing materials as appropriate.

Overhead Projection System With Instructor - A system consisting of a horizontal stage projector designed to use a vertical throw for focusing an enlarged transparency image upon a projection screen. An operator is normally required to change the transparency and furnish verbal commentary.

Sound Slide Projection System - A system for presenting information to means of an audio tape and a series of synchronized projected visual slides. The use of adjunct equipment allows the system to be used in support of "hands-on" training.

Teaching Machine - Branching, Still Visual With Audio - An instruction device composed of large step multiple choice programmed instruction frames (still) with synchronized sound and a manually controlled device to select, sequence, and display program frames in an order dependent upon the trainee's last response.

Teaching Machine - Branching, Still and Motion Visual With Audio - An instruction device composed of large step multiple choice programmed instruction frames (still and motion) with synchronized sound and a manually controlled device to select, sequence, and display program frames in an order dependent upon the trainee's last response.

Teaching Machine - Branching, With Adjunct Equipment - An instruction device composed of large step multiple choice programmed instruction frames (still or motion with or without audio) with a manually controlled device to select sequence and display program frames in an order dependent upon the trainee's last response. Associated with this equipment is a second piece of equipment, such as a mockup, which is the subject of instruction and is operated according to instructions from the basic teaching machine.

Teleconference System - A telecommunication system that allows audio and visual two-way communication between two or more remote locations.

Television - Cable (CATV) - A hybrid CCTV system offering selective, multiple channel, encoded programming to cable network patrons. A typical system consists of a signal receiving antenna system for the master station and relay of amplified signal channels via area substations to system subscribers. Programming may also be generated and transmitted between substations offering multiple options for conference or training. Programs are encoded for privacy and control of viewing audience.

Television - Closed Circuit (CCTV) Without Feedback - CCTV without feedback is an electronic transmission system for images and sound using a coaxial cable distribution system. System design includes one or more studios or control rooms, a signal distribution center, and signal distribution cables terminating in reception areas equipped with receiver/monitors. Off air, live or video taped programs may be used.

Television - Portable Video Tape System - A low cost video tape recording and playback system which is self-contained and portable. Typical systems consist of one or two mobile vidicon cameras, small scan video tape recorder (B&W) and a monitor received. Immediate area programming and open broadcast reception and recording is standard.

Carrel - AV Equipped - A small enclosure or alcove incorporating a desk used for individual studies, supplied with audio and visual materials and supporting equipment.

Carrel - Laboratory - A small enclosure or alcove incorporating a desk, to be used by one or two trainees and equipped with a set of special tools and materials for carrying out a hands-on learning event. It may include audio-visual systems.

Computer Assisted Instruction (CAI) - A form of individualized instruction that employs a digital computer technology to manage and display information to a student, accept student responses, provide knowledge of results, and select subsequent learning events.

Computer Assisted Instruction - PLATO IV Basic Configuration - An individualized computer based teaching system being developed by the University of Illinois at Urbana-Champaign, and includes up to 4096 terminals, a communication network, a central computer and the author language TUTOR.

Computer Assisted Instruction - PLATO IV, Basic Configuration and Audio - System includes basic configuration of PLATO IV plus a random access audio playback system.

Computer Assisted Instruction - PLATO IV, Basic Configuration With Adjunct Equipment - Includes the basic terminal with externally connected auxiliary equipment.

Computer Assisted Instruction - PLATO IV Basic Configuration With Adjunct Equipment and Audio - The basic terminal with externally connected auxiliary equipment includes a random access audio playback system.

Computer Managed Instruction (CMI) - A computer has the required instructional design program. It can receive information about the student behavior from terminals on- or off-line and give him information about his achievement. The design normally gives instructions for changes which are indicated by student response and may drop him to easier exercises or automatically cycle him to a higher response exercise.

CMI - CAI TICCIT - A system designed by Mitre Corporation and programmed by Utah State University which can both manage student instruction and/or provide full instruction.

Computer Simulation

Computer Simulation - On-Line - A trainee station equipped with a computer terminal in which the trainee operates in direct interface with the computer as part of the program loop. By his inputs, the trainee determines his allowable performance parameters and discerns the effect of his inputs upon the system being simulated.

Computer Simulation - Off-Line - A trainee station equipped with a computer terminal enabling a trainee to select a computer simulation program, enter his own variables (batch processing) and run the simulation to determine the performance of the simulated system under a variety of conditions.

GAME - Computer Simulation, Solitaire, With Visual Display - Any contest, governed by rules, between a single player and a computer with visual attachments where the contest is a dynamic model of some real world system or event.

Operational Equipment With Manuals - A unit of operational equipment being used for instructional or training purposes with its supporting technical documentation such as operator's guides, maintenance manuals and parts lists. May be an electronic black box, rifle, or truck. Usually associates with individual training leading to team training.

Operational System - Real Environment - An operational system used for training such as an aircraft, ship, or track vehicle. Part task, in conjunction with or independent of normal operations. A performance aid is inherent in trainer usage.

Operational System - Synthetically Simulated - A device, machine, apparatus, or paper model that synthetically reproduces a condition or conditions of an operational system. It may or may not physically represent the operational system, but will functionally allow an individual or crew to practice operational tasks in accordance with training objectives.

Operational System - Synthetically Stimulated - An operational system that is used for training by interfacing input equipments in the form of tapes, black boxes, or computers. Such input equipments present programmed data to the operational system allowing it to be used for training or evaluative purposes. May be used for part task, full task, sub-team, multi-team training, or combinations thereof. A performance aid is inherent in trainer usage.

Procedure Trainer - Training hardware designed for basic training, familiarization or transition type procedure training for normal, alternate, and emergency operation of operational hardware. Trainer systems respond appropriately to trainee inputs but to a lesser degree of fidelity of performance than is required for simulators. May be used for various combinations of part task, full task, subteam, team, or multi-team training.

Procedure Trainer - Adjunct Displays and Logic - Training hardware designed for basic training, familiarization, or transition type procedure training for normal, alternate, and emergency operation of operational hardware. Trainer systems respond appropriately to trainee inputs but to a lesser degree of fidelity of performance than is required for simulators. May be used for various combinations of part task, full task, sub-team, team, or multi-team training. Adjunct displays and logics may include scoring attachments, adaptive control, automatic demonstrations, enhanced displays, automated briefing and debriefing capability, automatic coaching, remedial exercise prescriptions or follow-on assignments.

Simulator - Training hardware that is designed specifically for training purposes to simulate operational equipment/systems or portions thereof, and which simulates the operational environment in a training situation. When operated, it becomes a dynamic model of the appearance and performance of selected aspects of the operational equipment/system. May be designed for part task, full task, sub-team, team, multi-team training or combinations thereof.

Simulator - Adjunct Displays and Logic - Training hardware that is designed specifically for training purposes to simulate operational equipment/systems or portions thereof, and which simulates the operational environment in a training situation. When operated, it becomes a dynamic model of the appearance and performance of selected aspects of the operational equipment/system. May be designed for part task, full task, sub-team, team, multi-team training or combinations thereof. Adjunct displays and logics may include scoring attachments, adaptive control, automatic demonstrations, enhanced displays, automated briefing and debriefing capability, automatic coaching, remedial exercise prescriptions or follow-on assignments.

Specimen Sets - An instructional kit containing samples of similar items, liquids or materials that may be tested or evaluated for identification, quality or type.

Physiological Trainer (Hostile Environment) Visual - A training device designed to place controlled stress on the human visual systems, through the use of physiologically and/or psychologically adverse or low threshold visual signals, to enable a trainee to learn to function in this adverse environment.

Physiological Trainer (Hostile Environment) Surface and Internal Senses - A broad category of training devices designed to provide the cutaneous, kinesthetic, and olfactory sensors with physiologically and/or psychologically adverse signals, to enable a trainee to function in adverse pressure, temperature, pain, or disorientating motion environments.

Visual Only

Filmstrip Projection System - A single frame projector or attachment thereto that will accept a filmstrip format and project the film images upon a viewing screen. See: Sound Filmstrip Projection System.

Microform With Information Mapping - Micro-imagery, such as microfilm, used as a medium of introduction with the additional requirement that each block of information be clearly identified as introduction, overview, test, review questions, index, and other discrete titles, and that each type of information be positioned in a standard location within the medium format.

Microform With Information Mapping and Adjunct Equipment - The theoretical configuration of a training system to support individualized instruction composed of microimagery in an information map format, a microform projector, and a piece of auxiliary equipment, such as a mockup, which is the subject of the instruction.

Slide Projector System - 2" x 2" - A class of single frame picture projectors that will accept a standard 2" x 2" slide and project the contained image upon a viewing screen.

Simulation - Paper - The representation of selected dynamic characteristics of a system through the use of charts, tables, static photographs, drawings, and lists of performance characteristics under specified conditions. This information is presented in such a way that the trainee can study the initial performance of the system, change inputs to or elements within the system and note changes in the performance of the system.

Teaching Machine - Linear, Still Visual - An individualized instruction system composed of a fixed linear sequence of small step programmed instruction frames (still) and a manually controlled device to display the information.

Teaching Machine - Branching, Still Visual - An individualized instruction system composed of large step multiple choice programmed instruction frames (still) and a manually controlled device, to select sequence and display program frames in an order dependent upon the trainee's last response.

Print Materials

Case Study Folder - A folder of detailed background information on a problem requiring a decision or plan of action; to be read by the trainee prior to his (1) making a decision on how to resolve the issue, and (2) participating in a critique on various solutions. Various forms of folders are used in support of such methods of instruction as the Case Study, Incident and In-Basket methods of management and leadership training.

Flash Cards - A set of cards designed to be used by an instructor in front of a group of trainees to drill the group in the recall of memory type information.

Printed Materials - Handouts - Handouts are a class of printed materials issued to a student for his use and retention to augment regular instructional materials. They are usually instructor prepared, machine copied materials of one or two pages highlighting specific topics or updating existing materials.

Printed Materials - Performance Aids - Performance aids are a class of printed materials that aid in job performance by providing data that should not be committed to memory, such as checklist routines, tables, equipment test tolerance matrices, and the like.

Printed Materials - Reference Books - Reference books are a class of printed materials used to identify certain facts or for background information such as dictionaries, encyclopedias or technical poublications.

Printed Materials - Reference Charts - Reference charts are a class of printed material pictorially or geographically displaying data used to identify certain facts or for background information. Included are data charts, schematic diagrams, topographical maps, and the like.

Printed Materials - Self Scoring Exercises - Self scoring materials include exercises and quizzes used in conjunction with standard curriculum, programmed instruction or independently. The class includes electrographic or mark sense materials scored by keys or computer, punch mark and other mechanical score indicating equipments, chemically scored materials, etc. that have the capability of providing near immediate student feedback without the use of prolonged scoring procedures.

Printed Material - Workbook - Workbooks are a class of printed material used to augment or replace regular instructional texts by providing a mix of text information and practice exercises within a single book or manual.

Printed Material - Textbook - Textbooks are a class of printed material dealing with a subject of study, intended for use at a specified level of instruction and used as a principal source of study.

Programmed Text - Branching - A printed text containing frames of information and multiple choice questions concerning the information, organized in such a way that the trainee's choice of response directs him to remedial frames or advanced material, as appropriate. The material is carefully sequenced, tested, and revised to ensure that a specific student population will achieve stated behavioral objectives with a predetermined level of success.

Programmed Text - Branching With Adjunct Material/Equipment - Used with adjunct materials or equipment, a wide range of training application is available.

Programmed Text - Linear - A printed text containing a fixed sequence of small frames of information usually in the form of questions requiring the trainee to construct a simple written response, which is immediately evaluated. The material is carefully sequenced, tested, and revised to ensure that a specific student population will achieve stated behavioral objectives with a predetermined level of success.

Programmed Text - Linear With Adjunct Material/Equipment - Used with adjunct material or equipment, a wide variety of training application is available.

Study Card Sets - A deck or decks of cards designed to present training information to an individual student.

Special and Non-Standard Items

Automatic Raters - Informal Training - A class of electro-mechanical response rating devices used primarily for informal refresher type training. Typically, a gaming approach is used to offer multiple choice type questions to the trainee. Immediate feedback upon answer choice selection is given in the form of right, wrong, or item score as well as cumulative score.

Carrel - Dry - A small enclosure or alcove incorporating a desk, used for individual studies, without audio-visual or laboratory equipment.

Do-It-Yourself Kits - A type of instructional kit containing instructions and materials for fabricating a usable product. Such a kit offers practical "hands-on" training following theoretical training.

Game-Manual Simulation - Any contest between teams or individual players, governed by rules, where the contest is a dynamic model of some real system, and is played without the aid of a computer using gaming techniques.

Game - Manual Non-Simulation - Any contest between teams or individual players, governed by rules, where the contest is not a dynamic model of some real system, and is played without the aid of a computer.

Game - Computer Supported Simulation - Any contest, governed by rules, between teams or individuals, where the contest is a dynamic model of some real system, and a computer is used in performing some of the calculations necessary for the operation of the model as in computer supported war gaming.

Logic Trainers - A class of trainers that synthetically allow electronic, mechanical, fluid, or gaseous conceptual system logic training without the use of actual hardware.

Mockups, Panels, and Demonstrators - Dynamic - A visual training aid that allows an instructor to demonstrate manipulative principle, movement in time or space, steps of a procedure, linear effect within systems or changes in condition of equipment or systems through one or more operating phases.

Models and Static Mockups - Small Scale - A three-dimensional training aid built to scale and representing operational equipment. It may be a solid or cutaway model capable of disassembly by which spatial and/or sequential relationships are represented. Also included are layout models, recognition model sets, and terrain or topographical models.

Mockups, Panels, and Demonstrators - Static - A training aid used to demonstrate relative shape, size, composition or function of an object or system by a visual-cognitive process performed by the trainee. Such non-moving, real or "scaled" aids include cutaway models, diagrams, blow-apart hardware displays, etc.

JOB AID FOR
REVIEW AND SELECTION OF EXISTING MATERIAL

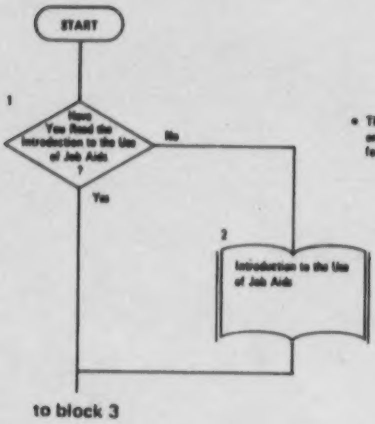
ISD III.3

Manual

This is the 11th in a series of ISD Job Aids for use in instructional design and development. This volume is to be used as a supplement to the primary document "Job Aids: Descriptive Authoring Flowcharts ISD III.3 Review and Select Existing Material." The flowchart document will direct you to specific guidance, examples, and references provided in this volume. If you do not have the primary flowchart document, request it from your supervisor.

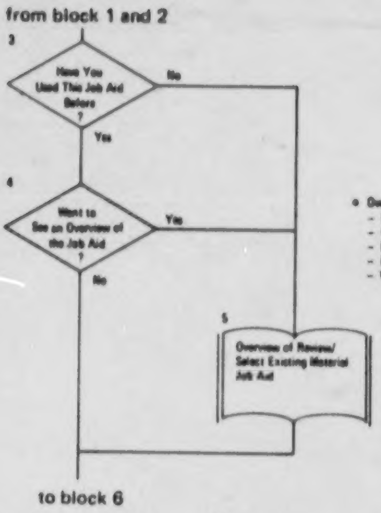
The wording in this manual should not be construed to discriminate between the sexes. In order to avoid a repetitious use of the terminology, "he/she," the terms, "he," "him," and "his," as well as "men," are intended to include both the masculine and feminine gender. Any exceptions to this usage will be so noted.

ISD III.3 Review/Select Existing Material


START
1
Have You Read the Introduction to the Use of Job Aids ?
No
Yes
2
Introduction to the Use of Job Aids
to block 3

- This introduction provides the user with instructions on the basic structure of the Job Aids and guidance for their use.

- Refer to Introduction.


from block 1 and 2
3
Have You Used This Job Aid Before ?
No
Yes
4
Want to See an Overview of the Job Aid ?
Yes
No
5
Overview of Review/ Select Existing Material Job Aid
to block 6

- Overview includes:
  - Goal
  - Objectives
  - Product
  - Major Steps
  - Worksheets Used

- For detailed overview, see below.

What is the Review and Selection of Existing Materials Job Aid all about?

- **GOAL**

The purpose of this job aid is to help you evaluate existing materials in order to determine their usefulness in your training program.

Since the cost of developing new materials is so high, your goal is to retain as many existing materials as possible. These can be incorporated into a new course just as they are, or after revisions have been made.

- **OBJECTIVES**

1. Given a set of existing materials, analyze the materials to determine if the materials, parts of the materials, or revised versions of the materials will be useful for the instruction you are developing.
2. Given the appropriate worksheets and instructions for filling them out, document the materials examined and the outcome of the examination.

- **PRODUCTS**

This job aid will result in a list of all existing materials which have been considered for use in your course development activity. Each item of material is evaluated as to whether it should be accepted or rejected for use in your course. If the material is to be accepted suggestions for revisions (if needed) are documented. Each item is therefore classified as:

a) accept for use without revision
b) revise for use
c) reject

• OVERVIEW OF MAJOR STEPS IN REVIEWING AND SELECTING EXISTING MATERIALS

Step 1. Identify potentially useful materials from sources such as:

- a. references identified in the job aid (listed on Reference Review Sheet A)
- b. DA Pam 611-11 or 611-12
- c. supervisors
- d. other subject matter experts
- e. your own personal experience in the area

Step 2. Obtain references

Step 3. Identify and record specific items of material identified in the references

Step 4. Examine each item of material in terms of how well it matches with:

- a. trainee characteristics
- b. learning guidelines
- c. proposed delivery system
- d. proposed management plan

Step 5. If examination indicates material is useful but would require revision, consider whether revisions would be less costly to make than to develop new material.

Step 6. On the basis of Steps 4 and 5, above, determine and record whether items of material should be:

- a. accepted as is
- b. rejected completely
- c. revised—specific suggestions for revision are recorded

- **WORKSHEETS USED**

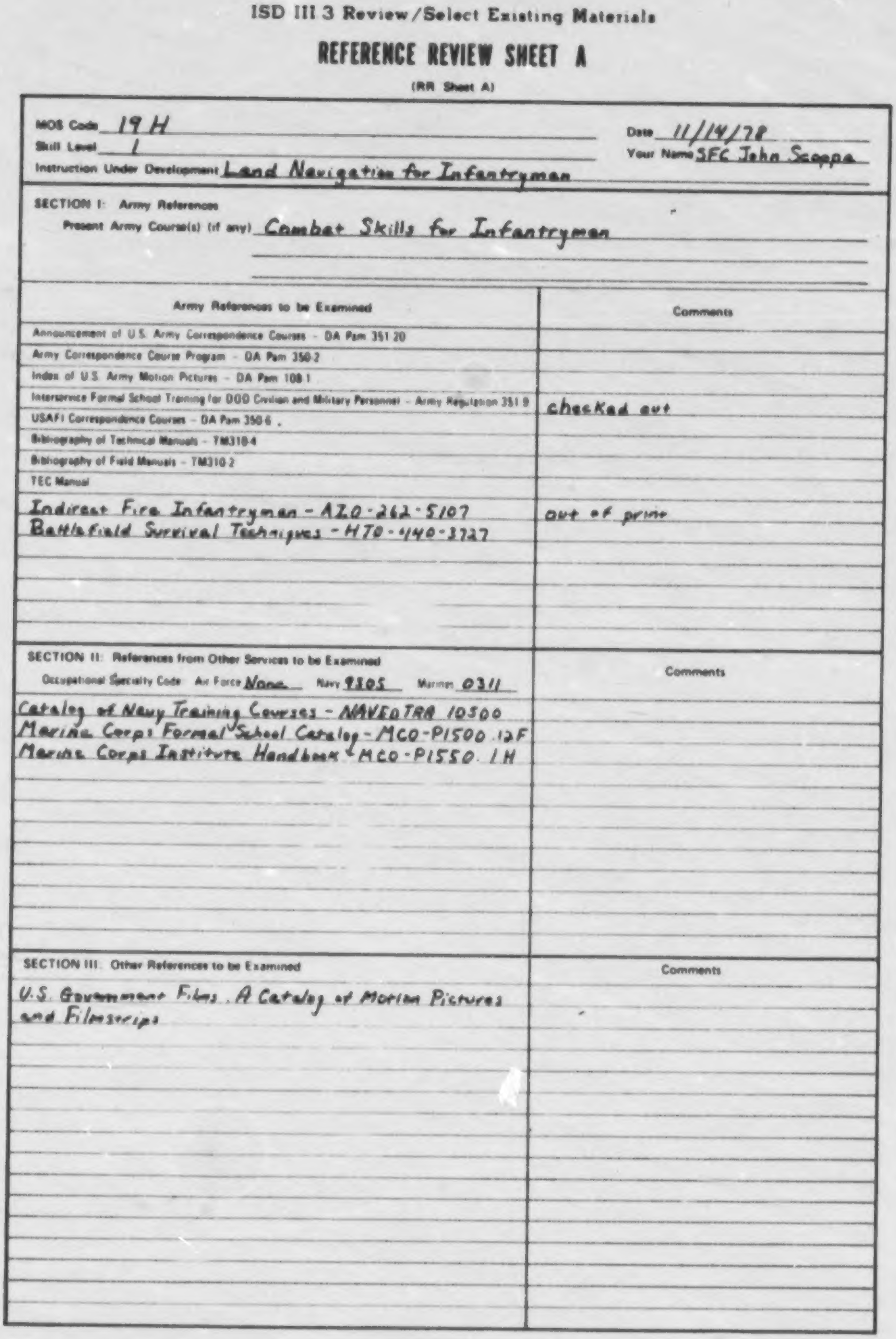
  — The tables on page K-7 thru K-10 are samples of Reference Review Sheet A (front and back) and Reference Review Sheet B (front and back). The front side of Sheet A and both sides of Sheet B have been filled in to show how the forms look when completed.

- **DESCRIPTIVE FLOWCHARTS**

  — The flowchart on pages K-46 and K-47 shows the steps in the use of the Job Aid for Review and Selecting Existing Materials. The flowchart will be useful to you in getting a clear picture of the overall process used in this job aid. A more completely described flowchart is provided in Job Aids: Descriptive Authoring Flowcharts, (ISD III.3 Review/Select Existing Material).

Table K-7

Completed Reference Review Sheet A (Front Side)



ISD III 3 Review/Select Existing Materials

REFERENCE REVIEW SHEET A

(RR Sheet A)

MOS Code 19 H
Skill Level 1
Instruction Under Development Land Navigation for Infantryman
Date 11/14/78
Your Name SFC John Scoppa

SECTION I: Army References

Present Army Course(s) (if any) Combat Skills for Infantryman

Army References to be Examined	Comments
Announcement of U.S. Army Correspondence Courses - DA Pam 351 20	
Army Correspondence Course Program - DA Pam 350-2	
Index of U.S. Army Motion Pictures - DA Pam 108 1	
Interservice Formal School Training for DOD Civilian and Military Personnel - Army Regulation 351 9	checked out
USAFI Correspondence Courses - DA Pam 350 6	
Bibliography of Technical Manuals - TM310-4	
Bibliography of Field Manuals - TM310-2	
TEC Manual	
Indirect Fire Infantryman - AZ0-262-5107	out of print
Battlefield Survival Techniques - HT0-440-3727	

SECTION II: References from Other Services to be Examined Occupational Specialty Code Air Force None Navy 9305 Marines 0311	Comments
Catalog of Navy Training Courses - NAVEDTRA 10500	
Marine Corps Formal School Catalog - MCO-P1500 12F	
Marine Corps Institute Handbook - MCO-P1550 1H	

SECTION III: Other References to be Examined	Comments
U.S. Government Films. A Catalog of Motion Pictures and Filmstrips	

Table K-8

Blank Reference Review Sheet (Back Side)

References to be Examined	Comments

Table K-9

Completed Reference Review Sheet B (Front Side)

Page 1 of 1 Pages

ISD III.3 Review/Select Existing Material

REFERENCE REVIEW SHEET B

(RR Sheet B)

MOS Code 19 H Date 11/20/78

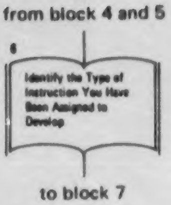
Skill Level 1 Your Name SFC John Scoppa

Col. 1 References (from RR Sheet A)	Col. 2 Materials (e.g. name, number, etc.)	Col. 3 Examine in Depth?	Col. 4 Comments
DA Pam 351-20	Combat in Fortified Areas H30-159	N	out-of-print
	The Rifle Company, Platoons and Squads B-5	Y	accept
DA Pam 350-2	How to Use a Compass H53-333	Y	revise
DA Pam 108-1	Night Vision Techniques TF 7-4121	Y	revise
	The Army Pathfinder TF 7-4197	N	reject
	Land Navigation by Terrain Features TF 7-4248	Y	accept
DA Pam 350-6	none		
TM 310-4	none		
TM 310-2	Map Reading FM 21-26	Y	accept
	Topographic Symbols FM 21-30	N*	reject
TEC Manual	Introduction to Land Navigation 930-071-0013-F	Y	accept
HTO-440-3727	same	Y	revise
NAVEDTRA 10500	Celestial Navigation, part 1, slides 10-35	Y	accept
MCO-P1500 12F	Drill Instructor Course H40-51B	Y	revise
MCO-P1550 1H	Scout-Sniper Course H45-51P	Y	reject
U.S. Govt Films	Battlefield Survival 350-227-6100	N	reject

Table K-10

Completed Reference Review Sheet B (Back Side)

Name of Material	Suggested Revisions
How to Use a Compass	change from programmed text to audio-visual
Night Vision Techniques	delete slides 15 through 22, expand commentary
Battlefield Survival Techniques	reduce vocabulary level (listening)
Drill Instructor Course	reduce reading level, add illustrations


from block 4 and 5
6
Identify the Type of Instruction You Have Been Assigned to Develop
to block 7

- Types of instruction may include:
  - a complete resident course
  - a correspondence course
  - one or more lessons
  - one or more modules
  - a TEC lesson
  - etc.
- For further guidance, see below.

Why is the type of instruction important?

- Prior to the actual identification and examination of potentially useful items of instruction material it is important for you to have a clear picture of the type of instruction that is to be developed. This will include such things as:

  a. A list of the tasks to be included in the instruction

  b. Job performance measures (performance descriptions)

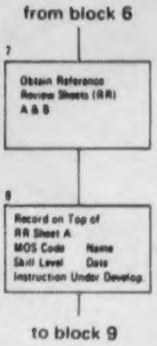
  c. Clearly stated learning objectives for each task

  d. An understanding of the entry characteristics of the student population

  e. What delivery system(s) is to be used for the instruction (e.g., lecture, demonstration, TEC lesson, film strip, etc.)

  f. Etc.

- After identifying the type of instruction that is to be developed and obtaining a clear picture of what it should include, you are ready to begin searching for materials that may be useful, with or without modification, in the instructional development process.

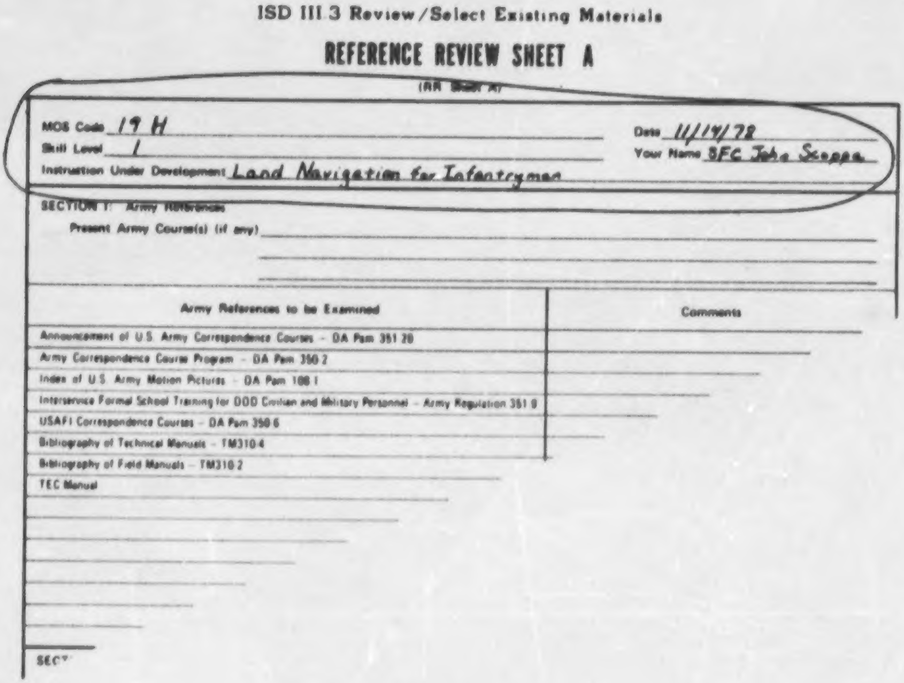

from block 6
7
Obtain Reference Review Sheets (RR) A & B
8
Record on Top of RR Sheet A
MOS Code
Name
Skill Level
Date
Instruction Under Develop.
to block 9

- Reference Review Sheets are contained in pocket at the back of Manual.
- For example of what completed RR Sheet A looks like, see Manual, page K 7 and K 8.

- Example see below

What does RR Sheet A look like when identifying information has been recorded?

Example:



ISD III.3 Review/Select Existing Materials

REFERENCE REVIEW SHEET A

(RR Sheet A)

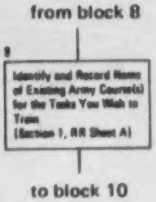
MOS Code 19 H
Skill Level 1
Instruction Under Development Land Navigation for Infantrymen
Date 11/14/78
Your Name SFC John Scoppa

SECTION I: Army References

Present Army Course(s) (if any)

Army References to be Examined	Comments
Announcement of U.S. Army Correspondence Courses – DA Pam 351 20	
Army Correspondence Course Program – DA Pam 350 2	
Index of U.S. Army Motion Pictures – DA Pam 108 1	
Interservice Formal School Training for DOD Civilian and Military Personnel – Army Regulation 351 9	
USAFI Correspondence Courses – DA Pam 350 6	
Bibliography of Technical Manuals – TM310 4	
Bibliography of Field Manuals – TM310 2	
TEC Manual	

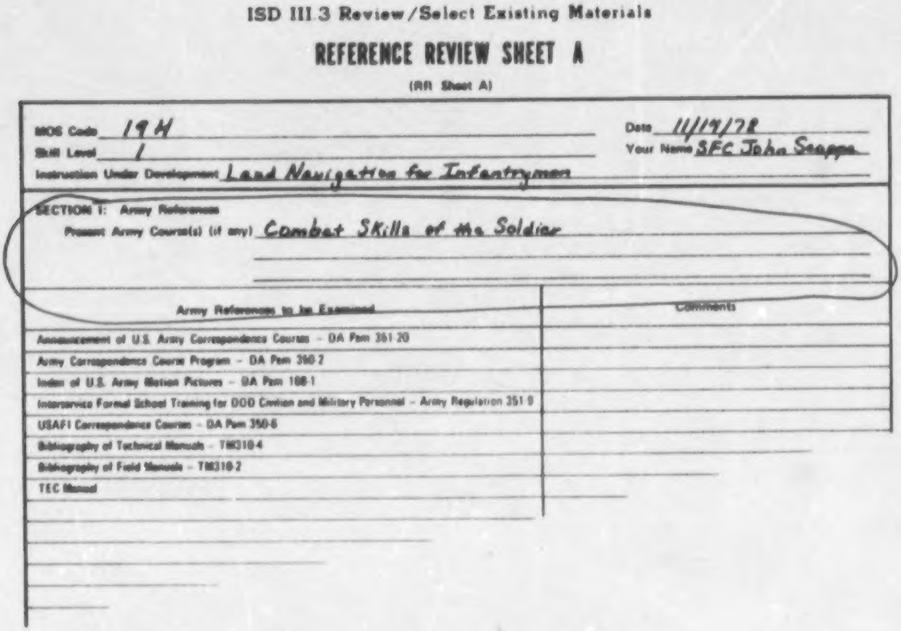
SEC


from block 8
9
Identify and Record Name of Existing Army Course(s) for the Tasks You Wish to Train
(Section 1, RR Sheet A)
to block 10

- At the present time these tasks may be trained in one or more courses. If so, name(s) of Course(s) is recorded.
- For example, see below.

What does RR Sheet A look like when the name(s) of present course(s) is recorded in Section I?

Example:



ISD III.3 Review/Select Existing Materials

REFERENCE REVIEW SHEET A

(RR Sheet A)

MOS Code 19H

Skill Level 1

Instruction Under Development Land Navigation for Infantrymen

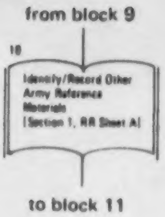
Date 11/14/78

Your Name SFC John Scapps

SECTION I: Army References

Present Army Course(s) (if any) Combat Skills of the Soldier

Army References to be Examined	Comments
Announcement of U.S. Army Correspondence Courses – DA Pam 351-20	
Army Correspondence Course Program – DA Pam 350-2	
Index of U.S. Army Motion Pictures – DA Pam 108-1	
Interservice Formal School Training for DOD Civilian and Military Personnel – Army Regulation 351-9	
USAFI Correspondence Courses – DA Pam 350-6	
Bibliography of Technical Manuals – TM310-4	
Bibliography of Field Manuals – TM310-2	
TEC Manual	


from block 9
10
Identify/Record Other Army Reference Materials (Section 1, RR Sheet A)
to block 11

- RR Sheet A includes standard Army references that should be examined.
- Any additional sources of appropriate Army material are added to Section 1 of RR Sheet A.
- For help in identifying and recording additional sources of Army material, see below.

How do I identify and record Army reference materials?

- **Identifying Army References Materials:**

  There are standard references that should be checked in order to identify material related to the tasks to be included in the instructional material you are developing. These references are shown in Section I of the Reference Review Sheet A. These references should certainly be examined. Other sources of potentially useful materials will include:

  a. instructional materials used for other Army MOSs which may include tasks similar to the ones for which you are developing instruction. Check with personnel working in these similar MOSs to identify potentially useful material.

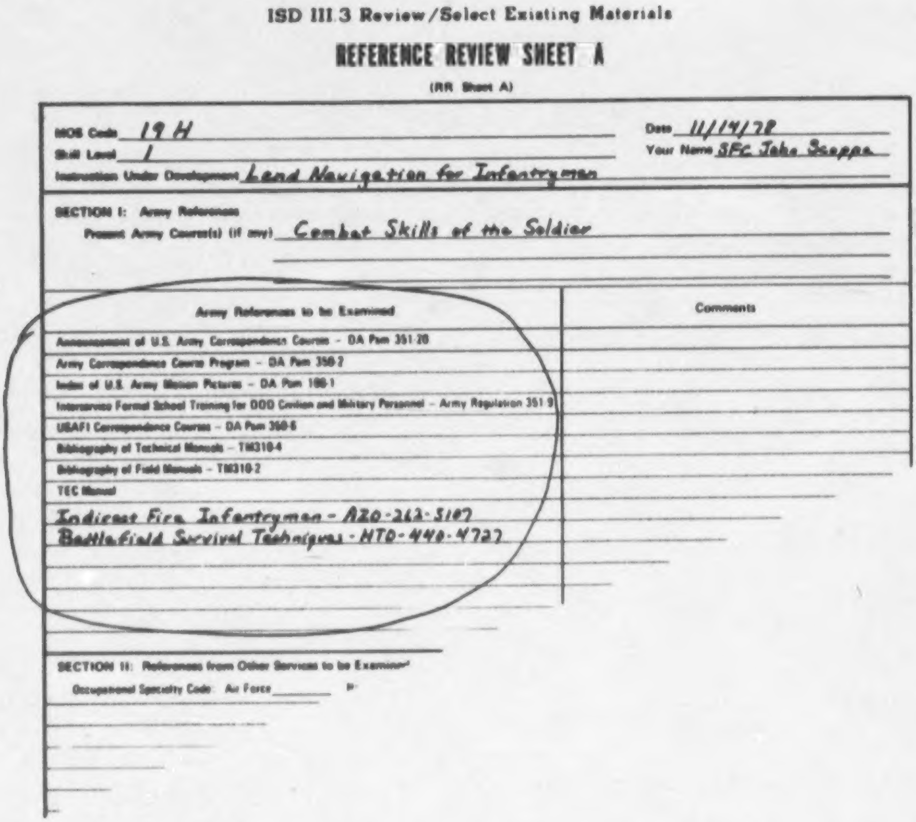
  b. your supervisor, peers, or your own past experiences.

- **Recording Army References:**

  — Space has been provided on RR Sheet A in Section I for recording other Army references. If additional space is required use the back side of RR Sheet A.

What does Reference Review Sheet A look like after Army references have been recorded?

Example:



ISD III.3 Review/Select Existing Materials

REFERENCE REVIEW SHEET A

(RR Sheet A)

MOS Code 19 H

Skill Level 1

Instruction Under Development Land Navigation for Infantryman

Date 11/14/78

Your Name SFC John Scoppa

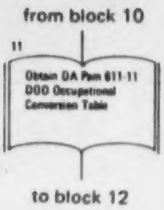
SECTION I: Army References

Present Army Course(s) (if any) Combat Skills of the Soldier

Army References to be Examined	Comments
Announcement of U.S. Army Correspondence Courses – DA Pam 351-20	
Army Correspondence Course Program – DA Pam 350-2	
Index of U.S. Army Motion Pictures – DA Pam 108-1	
Interservice Formal School Training for DOD Civilian and Military Personnel – Army Regulation 351-9	
USAFI Correspondence Courses – DA Pam 360-6	
Bibliography of Technical Manuals – TM310-4	
Bibliography of Field Manuals – TM310-2	
TEC Manual	
Indirect Fire Infantryman - A20-262-5107	
Battlefield Survival Techniques - HTD-440-4727	

SECTION II: References from Other Services to be Examined

Occupational Specialty Code: Air Force ________



- DA Pam 611-11 provides necessary information for converting Army MOS's into Air Force, Navy, and Marine equivalents.
- DA Pam 611-11 replaces DA Pam 611-12. If 611-11 is not available, DA Pam 611-12 can be used.
- For further explanation, see below.

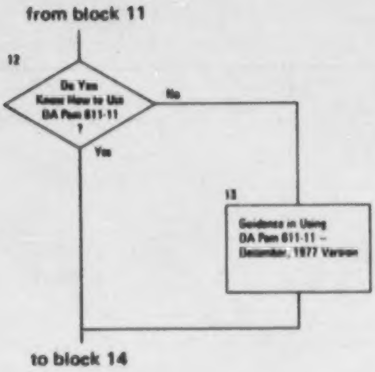
What is DA Pam 611-11 and where can I find it?

- The DoD Occupational Conversion Table is a compilation of all enlisted occupational specialities in use in the Armed Services, arranged under common DoD occupational groupings and a numerical coding system.
- DA Pam 611-11 Department of Defense (DoD) Occupational Conversion Table is available through your supervisor, MOS library, or school library.*

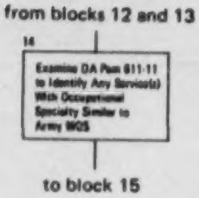
Why is DA Pam 611-11 important?

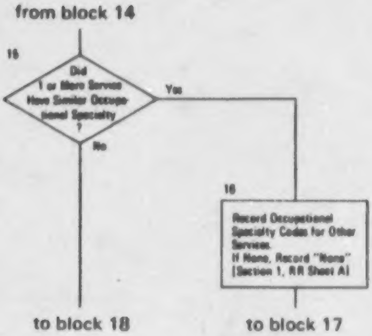
- If an occupational specialty appears under one or more services, you can be almost certain that those services have an appropriate training program for that specialty.
- If training programs exist for that specialty, then training materials also exist for those programs.
- Training materials that other services provide may be of use to you, therefore, DA Pam 611-11 is important.

*DA Pam 611-11 replaces DA Pam 611-12. If 611-11 is not available, DA Pam 611-12 can be used.


from block 11
12
Do You Know How to Use DA Pam 611-11 ?
No
Yes
13
Guidance in Using DA Pam 611-11 – December, 1977 Version
to block 14

- For guidance in using DA Pam 611-11, see technical notes at beginning of pamphlet.

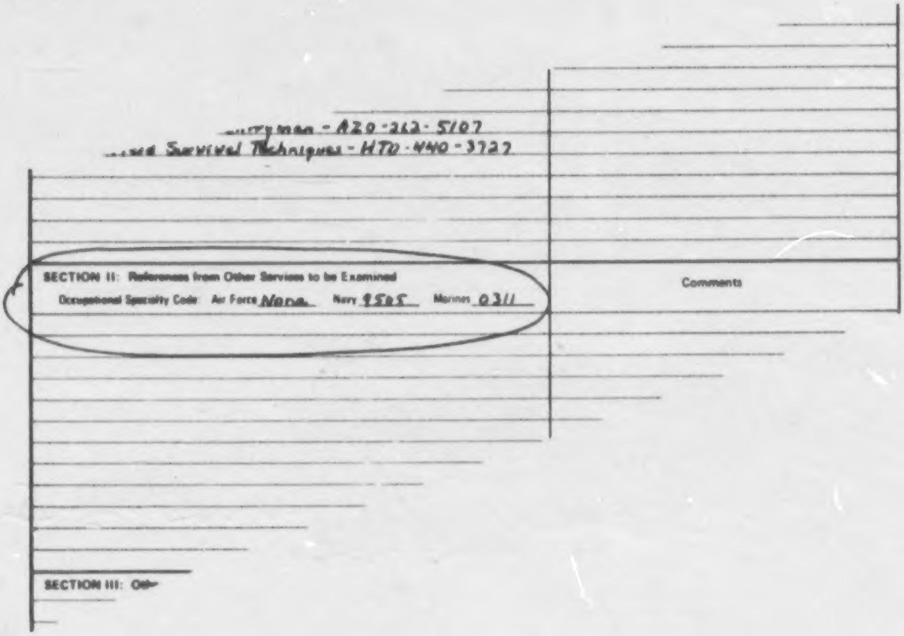

from blocks 12 and 13
14
Examine DA Pam 611-11 to Identify Any Service(s) With Occupational Specialty Similar to Army MOS
to block 15


from block 14
15
Did 1 or More Service Have Similar Occupational Specialty ?
Yes
No
16
Record Occupational Specialty Codes for Other Services. If None, Record "None" (Section 1, RR Sheet A)
to block 18
to block 17

- This code designation will aid in the later search for appropriate materials from other services.
- Example: see below.

What does RR Sheet A look like when occupational specialty codes for other services have been recorded?

Example:



ryman - A20-262-5107

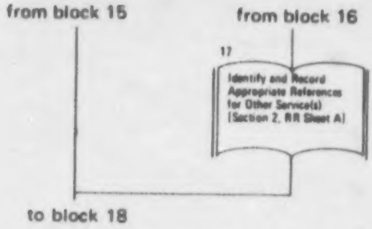
ed Survival Techniques - HTD-440-3727

SECTION II: References from Other Services to be Examined

Occupational Specialty Code: Air Force None Navy 9505 Marines 0311

Comments

SECTION III: Oth


from block 15
from block 16
17
Identify and Record Appropriate References for Other Service(s) [Section 2, RR Sheet A]
to block 18

- For a list of standard references from other services and guidance in recording same, see below.

Where do I find the references for other services with similar occupational specialties?

- **Identifying References from Other Armed Services:**

A partial list of standard references from other services is provided below:

SOURCES OF TRAINING COURSES AND INSTRUCTIONAL MATERIALS

Air Force

Extension Institute Catalog and Guide. ECIRP 50-1. Extension Course Institute Air University, Gunter Air Force Station, Alabama, 1974.

Instructor's Guide to Survival Training Films. ADTIC-PUB-G-111. Arctic-Desert-Tropic Information Center, Air University, Maxwell Air Force Base, Alabama.

Mather Air Force Base Learning Center Catalog. Headquarters, 323d Flying Training Wing, Mather Air Force Base, California, 95655, 1973.

USAF Formal Schools Catalog. AFM 50-5. Headquarters, U.S. Air Force, Washington, D.C., 20330, 1973.

NOTE: Additional Sources comprise USAF Study Reference Lists, Specialty Training Standards, and Career Development Courses.

Marines

Basic School Extension Catalog. Director, Extension School, Education Center, MCDEC, Quantico, Virginia, 22134.

Marine Corps Formal School Catalog. MCO-P1500.12F. Headquarters, United States Marine Corps, Washington, D.C., 1973.

Marine Corps Institute Handbook (12th Edition). MCO-P1550.1H. Director, Marine Corps Institute, Marine Barracks, Box 1775, Washington, D.C., 1973.

Navy

Catalog of Navy Training Courses (Vols. I, II, and III). NAVEDTRA 10500. Chief of Naval Education and Training Support, Pensacola, Florida, 32508, 1974.

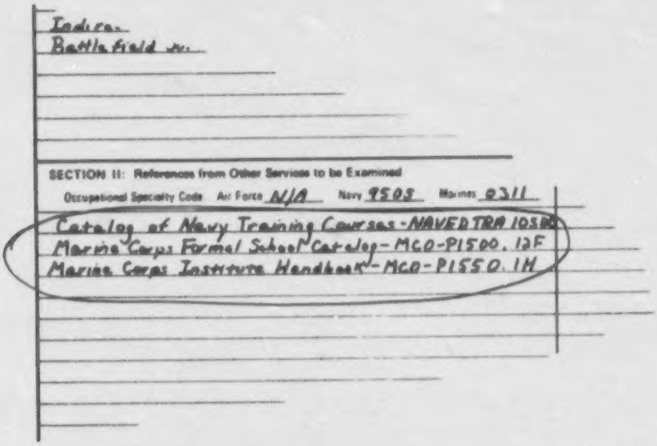
Documentary Film Catalog (Revision No. 1). NWC-TP-4784-REV-1. Commander, Naval Weapons Center, Cuwa Lake, California, 93555, 1971.

Films on Oceanography. Catalog Series, NODC-C-4. U.S. Naval Oceanographic Data Center, Washington, D.C., 20390, 1963.

Motion Picture Catalog of Films Available Through the External Relations Group Motion Picture Project. TG-533A. Commander, Naval Air Systems Command, Washington, D.C., 20360. Attention: AIR-604A1, 1966.

What does RR Sheet A look like after references from other services have been recorded?

Example:



Indiana

Battlefield

SECTION II: References from Other Services to be Examined

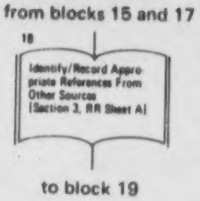
Occupational Specialty Code Air Force N/A Navy 9505 Marines 0311

Catalog of Navy Training Courses - NAVEDTRA 10500

Marine Corps Formal School Catalog - MCO-P1500.12F

Marine Corps Institute Handbook - MCO-P1550.1H

K-21


from blocks 15 and 17
18
Identify/Record Appropriate References From Other Sources [Section 3, RR Sheet A]
to block 19

- For a list of potential references and guidance in recording same, see below.

How do I identify and record references from other sources?

- **Identifying References From Other Sources:**
  - A partial list of references from other sources (e.g., government, civilian, etc.) is provided below:

OTHER FEDERAL GOVERNMENT SOURCES

Educational Resources Information Center (ERIC), National Center for Educational Communication, 400 Maryland Avenue, Southwest, Washington, D.C., 20202.

National Referral Center for Science and Technology, Library of Congress, First and Independence Avenue, Southeast, Washington, D.C., 20540.

Report Bibliography. Defense Documentation Center, Defense Supply Agency, Cameron Station, Alexandria, Virginia, 22314.

U.S. Government Films: A Catalog of Motion Pictures and Filmstrips for Sale by the National Audio Visual Center, National Archives Publication No. 70-3. National Archives, Washington, D.C.

OTHER GENERAL SOURCES

Directory of Educational Information Resources. Com Information Corporation, New York, 1971.

ERIC Document Reproduction Service (EDRS). Leasco Information Products, 4827 Rugby Avenue, Bethesda, Maryland, 20014.

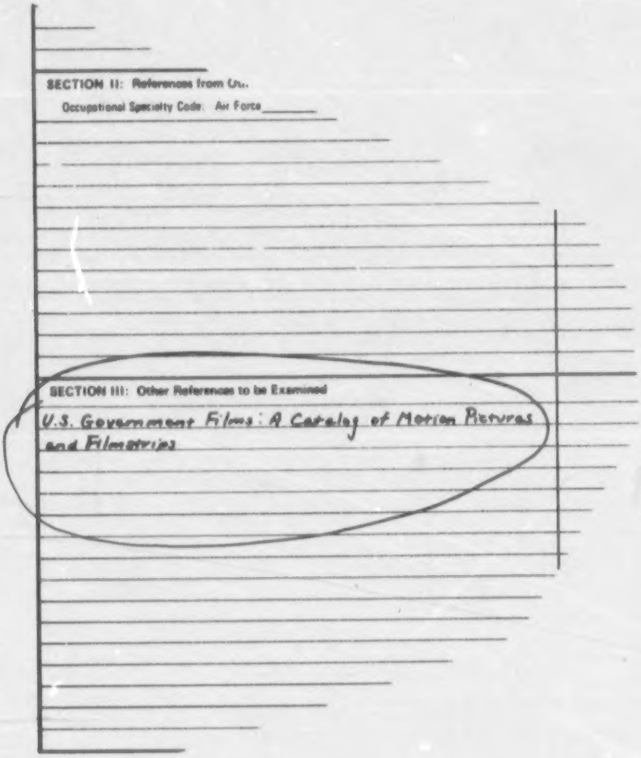
ERIC Clearinghouse on Educational Media and Technology. Institute for Communication Research, Stanford University, Stanford, California, 94306.

Educator's Purchasing Masters (Vol. I). Instructional Materials, Fisher Publishing Co., Englewood, Colorado, 1971.

New Educational Materials, 1970. Citation Press, New York, 1970.

What does RR Sheet A look like after the references from other sources have been recorded?

Example:

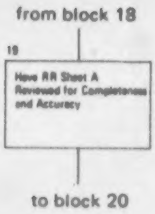


SECTION II: References from Ot..

Occupational Specialty Code: Air Force______

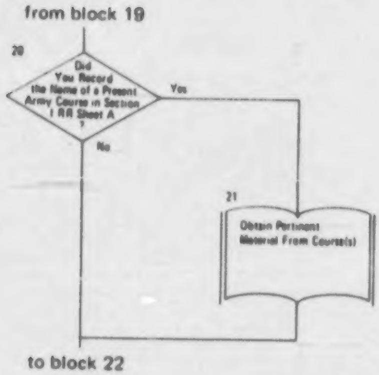
SECTION III: Other References to be Examined

U.S. Government Films: A Catalog of Motion Pictures and Filmstrips



from block 18
19
Have RR Sheet A Reviewed for Completeness and Accuracy
to block 20

- When all the possible references have been added to RR Sheet A, it is reviewed to see if all potential sources have been tapped.
- Sources for review would include supervisor, peers and/or instructors.


from block 19
20
Did You Record the Name of a Present Army Course in Section I RR Sheet A ?
Yes
No
21
Obtain Pertinent Material From Course(s)
to block 22

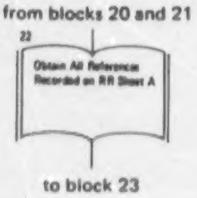
- Material(s) may consist of films, tapes, textbooks, graphs, pictures, over head projections, etc.
- For guidance in obtaining materials, see below.

How do I obtain the materials from an existing course for this MOS?

- Materials may be obtained through your supervisor, MOS library, or school library.
- Obtain all the materials (e.g., textbooks, films, tapes, graphs, etc.) from the course and hold for further evaluation.
- Remember, the purpose of this job aid is to:

Retain as many existing materials as possible!

- Thus, the best place to start is with material that has already been used in a course designed to train soldiers for this MOS.


from blocks 20 and 21
22
Obtain All References Recorded on RR Sheet A
to block 23

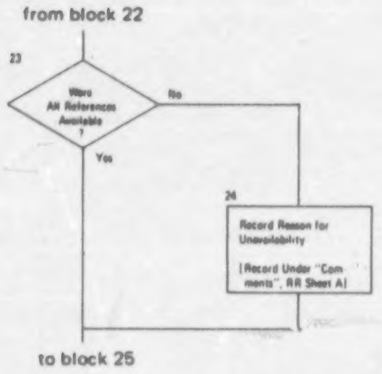
- For guidance in obtaining references, see below.

How do I obtain ALL references recorded on RR Sheet A?

- **These references may also be obtained through your supervisor, MOS library, or school library.**

- **Some references may be more easily obtained than others. For instance, you should be able to obtain Army references in a short amount of time. References from other services or other sources may take longer.**

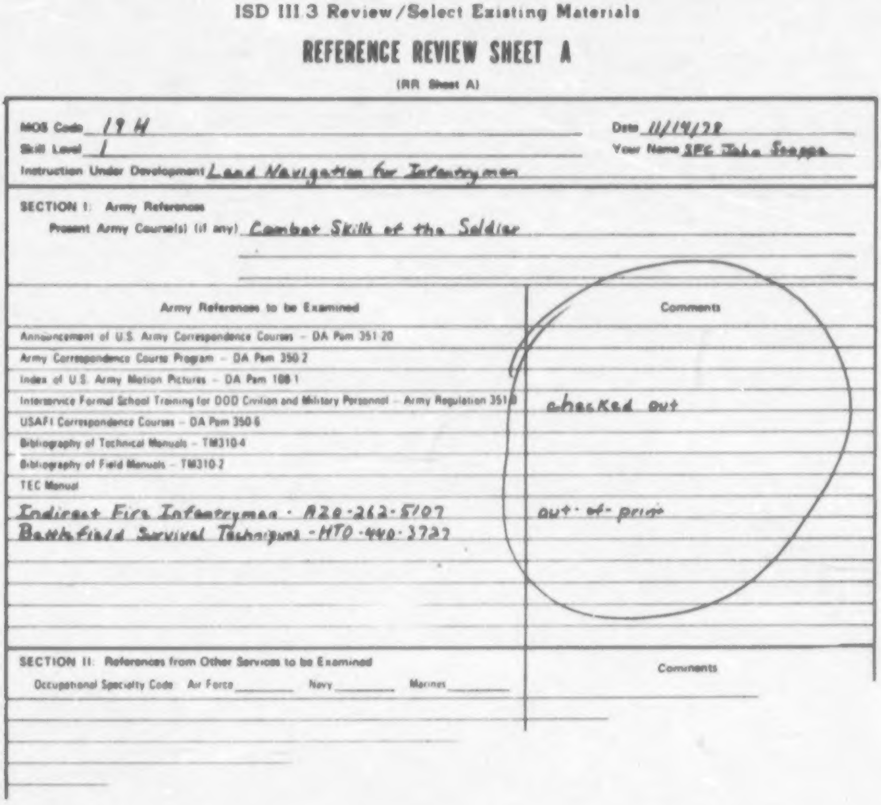
- **Obtain all those references that are available in a reasonable amount of time (e.g., 4-6 weeks).**


from block 22
23
Were All References Available ?
No
Yes
24
Record Reason for Unavailability
(Record Under "Comments", RR Sheet A)
to block 25

- The reason for unavailability is recorded so that someone else working on this block in the future will not waste time looking for references that are no longer in print, etc.
- Example: see below.

What does RR Sheet A look like after the reason for unavailability is recorded?

Example:



ISD III.3 Review/Select Existing Materials

REFERENCE REVIEW SHEET A

(RR Sheet A)

MOS Code 19 H
Skill Level 1
Instruction Under Development Land Navigation for Infantrymen
Date 11/14/78
Your Name SPC John Stepps

SECTION I: Army References

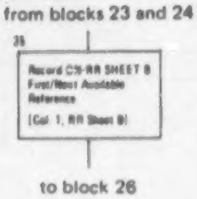
Present Army Course(s) (if any) Combat Skills of the Soldier

Army References to be Examined	Comments
Announcement of U.S. Army Correspondence Courses – DA Pam 351-20	
Army Correspondence Course Program – DA Pam 350-2	
Index of U.S. Army Motion Pictures – DA Pam 108-1	
Interservice Formal School Training for DOD Civilian and Military Personnel – Army Regulation 351-9	checked out
USAFI Correspondence Courses – DA Pam 350-6	
Bibliography of Technical Manuals – TM310-4	
Bibliography of Field Manuals – TM310-2	
TEC Manual	
Indirect Fire Infantryman · A20-262-5107	out-of-print
Battlefield Survival Techniques - HTO-440-3727	

SECTION II: References from Other Services to be Examined

Occupational Specialty Code: Air Force ______ Navy ______ Marines ______

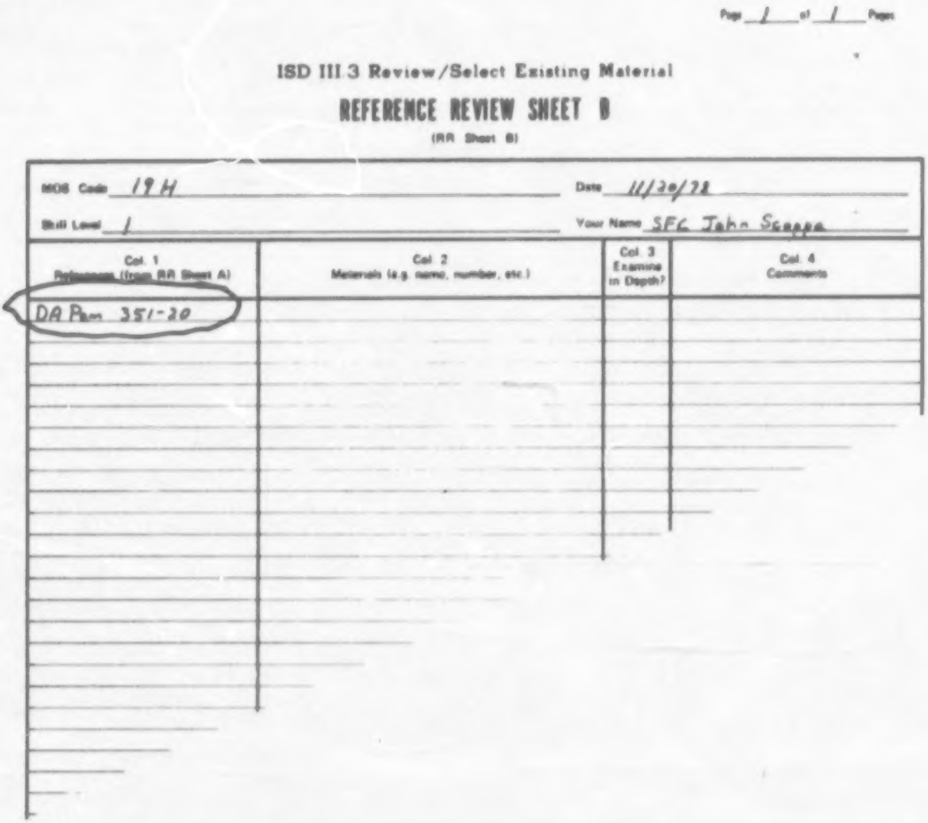
Comments


from blocks 23 and 24
25
Record C3-RR SHEET B First/Next Available Reference
(Col. 1, RR Sheet B)
to block 26

- This block begins the process of identifying materials for appropriateness to the instruction being developed.
- Work is now being done on RR Sheet B. The following is also recorded:
  - MOS Code
  - Skill Level
  - Date
  - Your name
- Example: see below.

What does RR Sheet B look like after the identification information and a reference have been recorded?

Example:



Page 1 of 1 Pages

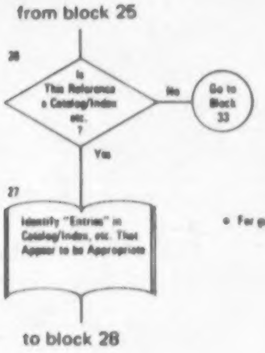
ISD III.3 Review/Select Existing Material

REFERENCE REVIEW SHEET B

(RR Sheet B)

MOS Code 19H
Date 11/20/78
Skill Level 1
Your Name SFC John Scappa

Col. 1 References (from RR Sheet A)	Col. 2 Materials (e.g. name, number, etc.)	Col. 3 Examine in Depth?	Col. 4 Comments
DA Pam 351-20			



- References are of two types:
  1) Catalogs/indexes, etc.: these contain only descriptions of material which will be obtained later.
  2) Items of actual material: which will be examined later.

- For guidance on how to find material in reference source, see below

---

What are "appropriate" entries and how do I look them up?

- **Appropriateness of Entry:**
  - Appropriateness of the entry is based on the description of the material that is given in the catalog.
  - In order to judge the appropriateness of a piece of material from the description given, ask yourself the following types of questions:

    1) From the description given, does the piece of material seem capable of conveying the information that you need to teach one or more tasks in your course?
       - For instance, suppose the MOS is "Military Police," then the following description of a film may suggest a piece of material that initially seems appropriate.

         "TF 19-1806 Military Police Support in Amphibious Operations (B&W—14 min—1953) Depicts the duties and functions of the military police in support of a combined amphibious assault."

    2) From the description given, does the piece of material seem to zero in on some aspect of what needs to be taught in your course?
       - For instance, does your course need to train the skills with sheet metal? Then the following description of a film may suggest a piece of material that initially seems appropriate.

         "MF 55-8525 Machine Methods of Forming Sheet Metal (B&W—20 min—1955) (Adopted Navy film) How to curve sheet metal and shape curved parts."

---

3) If the material relates to equipment, from the description given, is the equipment currently in use in your MOS?

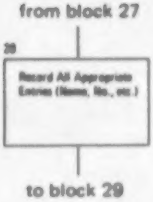
   - For example: If you were reviewing a course for finance clerks which explained the use of the manual adding machine, and your learning objectives specified the use of the electronic calculator, then that particular piece of material would not be suitable.

4) From the description given, does the piece of material require equipment that you know will not be available for training?

   - For example: You are developing a course for a lab technician and the material includes a specimen of a particular virus, which must be viewed through an electron microscope. Such microscopes are unavailable, thus you cannot use that specimen.

5) ETC.

- **Use of Catalog:**
  - Since each catalog/index may differ in the way it is set up, there are several ways of looking up material in which you are interested.
  - Check the front of each catalog for guidelines on the use of that particular catalog.


from block 27
28
Record All Appropriate Entries (Name, No., etc.)
to block 29

- Name, number, etc., of potential material is recorded so that material may be obtained for further evaluation.
- Example: see below.

What does RR Sheet B look like after names of potential items of material are recorded?

Example:

Page 1 of 1 Pages

ISD III.3 Review/Select Existing Material

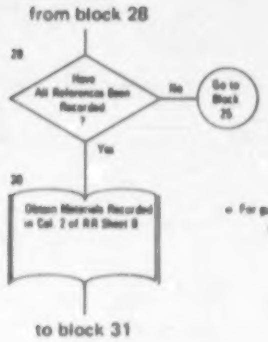
REFERENCE REVIEW SHEET B

(RR Sheet B)

MOS Code 19 H Date 11/20/78

Skill Level 1 Your Name SFC John Scoppa

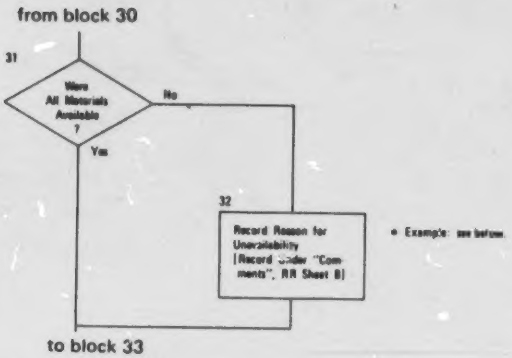
Col. 1 References (from RR Sheet A)	Col. 2 Materials (e.g. name, number, etc.)	Col. 3 Examine in Depth?	Col. 4 Comments
DA Pam 351-20	Combat in Fortified Areas H30-159		
	The Rifle Company, Platoons, and Squads B-2		


from block 28
29
Have All References Been Recorded ?
No
Go to Block 25
Yes
30
Obtain Materials Recorded in Col. 2 of RR Sheet B
to block 31

- For guidance in obtaining materials, see below

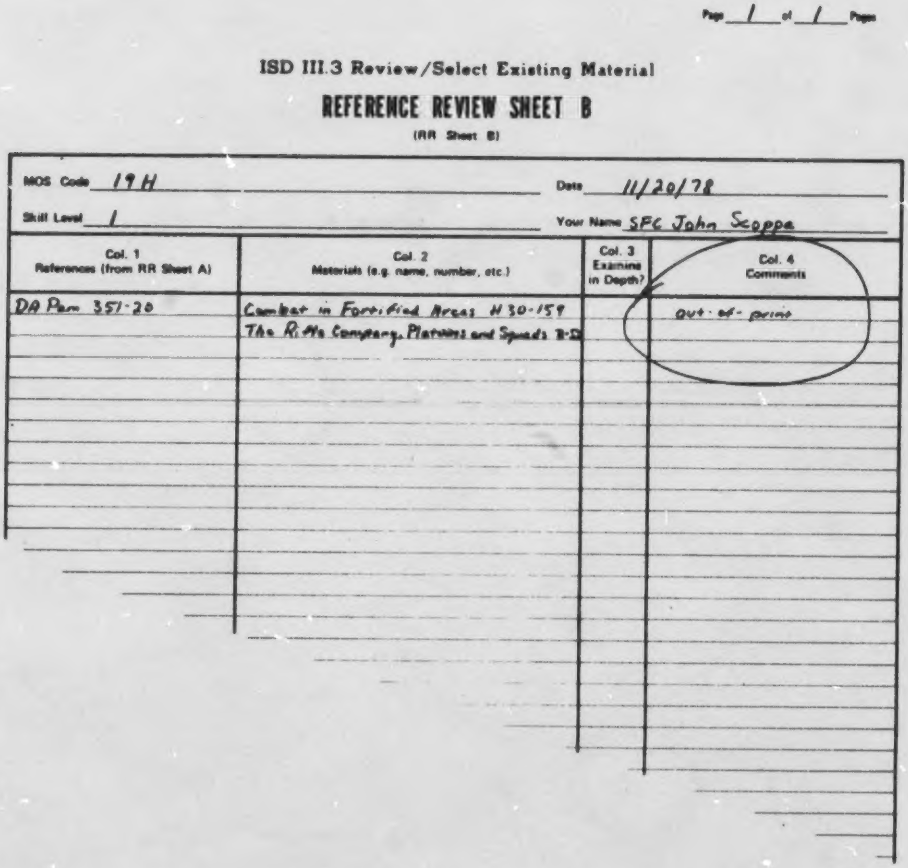
How do I obtain the material recorded in column 2 of RR Sheet B?

- **Materials may be obtained through your supervisor, MOS library, or school library.**
- **Some material (e.g., Army material) may be easier to get than others. Obtain all material that is available within a reasonable length of time (e.g., 4-6 weeks).**


from block 30
31
Were All Materials Available ?
No
Yes
32
Record Reason for Unavailability [Record Under "Comments", RR Sheet B]
• Example: see below.
to block 33

What does RR Sheet B look like after reason for unavailability of materials is recorded?

Example:



Page 1 of 1 Pages

ISD III.3 Review/Select Existing Material

REFERENCE REVIEW SHEET B

(RR Sheet B)

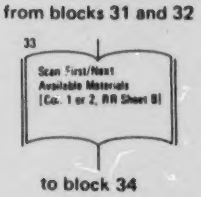
MOS Code 19 H

Date 11/20/78

Skill Level 1

Your Name SFC John Scoppa

Col. 1 References (from RR Sheet A)	Col. 2 Materials (e.g. name, number, etc.)	Col. 3 Examine in Depth?	Col. 4 Comments
DA Pam 351-20	Combat in Fortified Areas H 30-159		out-of-print
	The Rifle Company, Platoons and Squads B-52		


from blocks 31 and 32
33
Scan First/Next Available Materials [Co. 1 or 2, RR Sheet 8]
to block 34

- This block begins the process of scanning material to determine if it should be held and examined in depth at a later time.
- For guidance, see below.

How do I scan the material?

- **Scanning Material:**

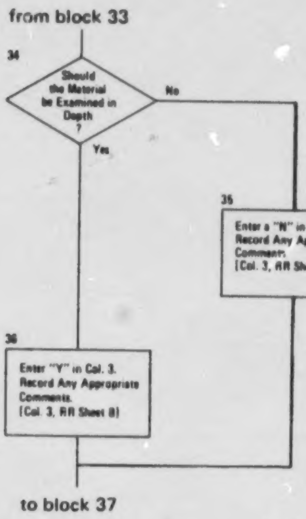
  — Material should be quickly looked over to determine whether it, in fact, matches the description given in the catalog. For example:

  Suppose the catalog description said the item of material explained how to tune an engine. You quickly scan the material and see that what the particular item of material really does is describe how a well-tuned engine should perform. The description of the material and what the material actually does do not match. Thus, this material is of no further use to you.

  — Material should be quickly looked over to see whether it is out of date. For example:

  The description of the material says that it teaches the care and maintenance of a particular piece of equipment. However, the piece of equipment has been sufficiently updated so that the material is now out of date. Here, too, the material is of no further use to you.

- Scanning material should not be a very time consuming process, and yet, enough attention should be given to allow you to make informative judgments on whether to hold the material for further evaluation.

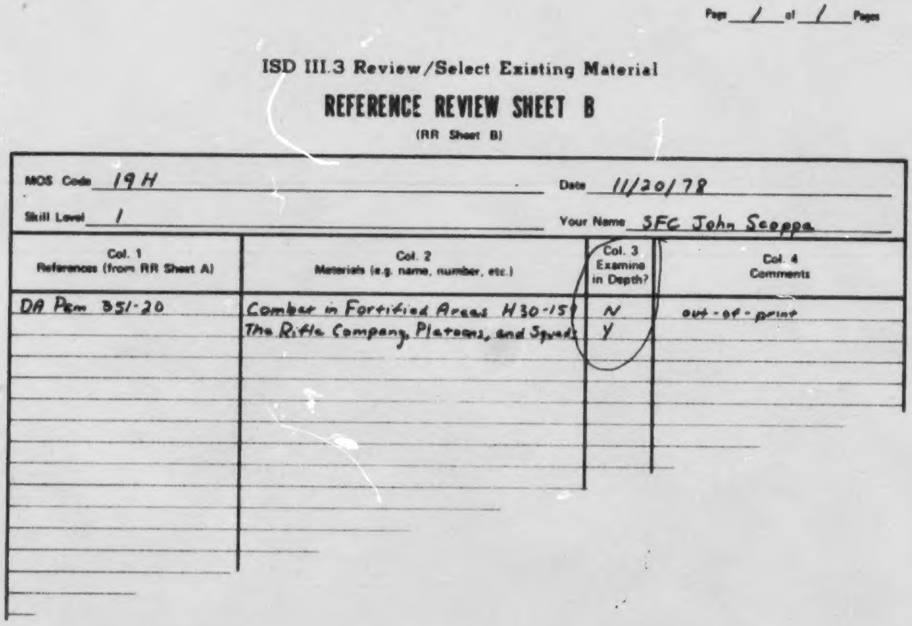

from block 33
34
Should the Material be Examined in Depth ?
No
Yes
35
Enter a "N" in Col. 3. Record Any Appropriate Comments. [Col. 3, RR Sheet B]
36
Enter "Y" in Col. 3. Record Any Appropriate Comments. [Col. 3, RR Sheet B]
to block 37

- An "N" meaning "No" is recorded to designate an item of material which appears to be of no further value for the instruction being developed.
- Example: see below.

- A "Y" meaning "Yes" is recorded to designate an item of material that initially seems appropriate for inclusion in instruction and therefore should be held for further evaluation.
- Example: see below.

What does the RR Sheet B look like after I have recorded the answer to whether the material should be examined in depth?

Example:



Page 1 of 1 Pages

ISD III.3 Review/Select Existing Material

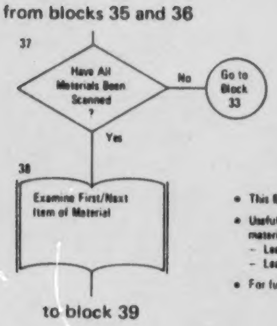
REFERENCE REVIEW SHEET B

(RR Sheet B)

MOS Code 19 H Date 11/20/78

Skill Level 1 Your Name SFC John Scoppa

Col. 1 References (from RR Sheet A)	Col. 2 Materials (e.g. name, number, etc.)	Col. 3 Examine in Depth?	Col. 4 Comments
DA Pam 351-20	Combat in Fortified Areas H30-15	N	out-of-print
	The Rifle Company, Platoons, and Squads	Y	


from blocks 35 and 36
37
Have All Materials Been Scanned ?
No
Go to Block 33
Yes
38
Examine First/Next Item of Material
to block 39

- This Block begins the process of an in-depth review of selected materials.
- Usefulness of materials is judged according to how consistent an item of material is with pre-determined:
  - Learner characteristics
  - Learning guidelines
  - Delivery system
  - Management plan
- For further explanation, see below.

What do I look for when examining existing material?

- When examining a piece of existing material, whether it is a complete course, part of a course, or perhaps only a visual aid from an existing course, you want to judge its usefulness for the instruction currently under development. This judgment is based on data already collected during the ISD process. If this data is not available to you, you may have to do a little research on your own and rely on past experience in order to make a judgment. Specifically, review the material to see if it is consistent with the following factors:

  1) Characteristics of your target population
  2) General learning guidelines
  3) Delivery system
  4) Management plan

• Hints for an Efficient Examination of Existing Materials

1. Be sure to look at each piece of material with reference to all four judgment factors (i.e., Trainee Characteristics, Learning Guidelines, Delivery Systems, and Management Plan) at the same time.

   DO NOT review material first with only one factor in mind (e.g., trainee characteristics) and then go back and re-review the material each time for the other factors. This is a waste of time.

   Remember, you want to make the most efficient use of your time and energy!

2. You may want to make a check-list for each piece of material to keep track of what you have seen regarding how consistent it is with the four factors.

What are some guidelines for reviewing material?

- In reviewing material use the following guidelines.
  1) Is the material consistent with characteristics of target population?
     a) Administrative requirements which involve personnel compliance with regulations and states. The trainees' rank, security clearance, time remaining in service, etc. may exclude them from using certain materials.
     b) Physical requirements which include specific skills and general fitness, including age, sex, height, color perception, night vision, etc. required for materials under review.
     c) Academic requirements which include educational or aptitude considerations, prerequisite training, English language fluency, math skills, reading comprehension, etc. required to understand materials under review.

GUIDELINES (continued)

2) Is the material consistent with general learning guidelines which should be features of all instruction*

   a) Inform the trainee of the objectives.

      The trainee must be told specifically what performance will be expected of him at the end of instruction. He must also be told under what conditions and to what standards he is to perform.

   b) Demonstrate the desired behavior.

      The material must help demonstrate to the trainee the expected performance. For example, if your instruction under development is related to the task, "Use a lathe," it is not sufficient to give only a verbal description of the performance. You also want to use visuals to demonstrate "how to do it."

   c) Provide for active practice.

      Especially when learning physical skills the trainee must engage in active practice. This practice must be provided under realistic conditions, using the same tools/equipment which will later be available on the job.

   d) Give feedback to the trainee.

      Feedback is information which the trainee receives after a performance. It tells him how correctly he performed. Feedback can be natural, (i.e., observing holes made in a firing target), or artificial (i.e., instructor's comments). Feedback is usually more effective when given immediately after performance.

---

*NOTE: May not apply when you are reviewing an isolated piece of material, such as a slide or chart, etc. In this case check to see if the material could be made consistent with these guidelines.

GUIDELINES (continued)

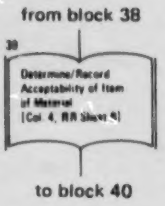
3) Is the material consistent with the delivery system specified for instruction under development?

   The delivery system includes all the types of facilities and equipment which have been specified for the type of instruction you have been assigned to develop. Examples of delivery systems include:

   a) texts, lectures, demonstrations
   b) programmed texts (branching or linear)
   c) computer-assisted instruction
   d) simulator with tutor and tests, etc.

4) Is the material consistent with the management plan for instruction under development?

   Management plans are designed to schedule the presentation of materials and activities. If the existing materials do not match the management plan, usually the management plan can be revised to fit the materials.


from block 38
39
Determine/Record Acceptability of Item of Material [Col. 4, RR Sheet 5]
to block 40

- An item of material may be
  - Accepted as is
  - Rejected
  - Revised
- For further information and example, see below

How do I decide upon and record acceptability of the existing materials?

- There are three possible categories into which existing materials belong. These categories are:
  1) Accept as is for use
  2) Reject as being impossible or impractical for use
  3) Revise for use
- Explanation of categories:
  1) Accept

     Materials which can be used "as is" because they are consistent with the four evaluation factors.
  2) Reject

     Materials which are not/could not be made consistent with the four evaluation factors. The reasons they should not be revised are that they would lose their instructional value, or that it would be less costly to produce more appropriate material.
  3) Revise

     Most materials will fall into this category. The decision to revise materials is reached by asking the following questions:

     a) Can something be deleted from the material to make it more appropriate?

     b) Can something be added to the material to make it more appropriate?

     c) Can something be deleted and something else be added to make it more appropriate?

d) Will material be in use for a long time so that cost of revisions are justified? (Sometimes less than perfect materials should be retained as is because revision costs are not justified).

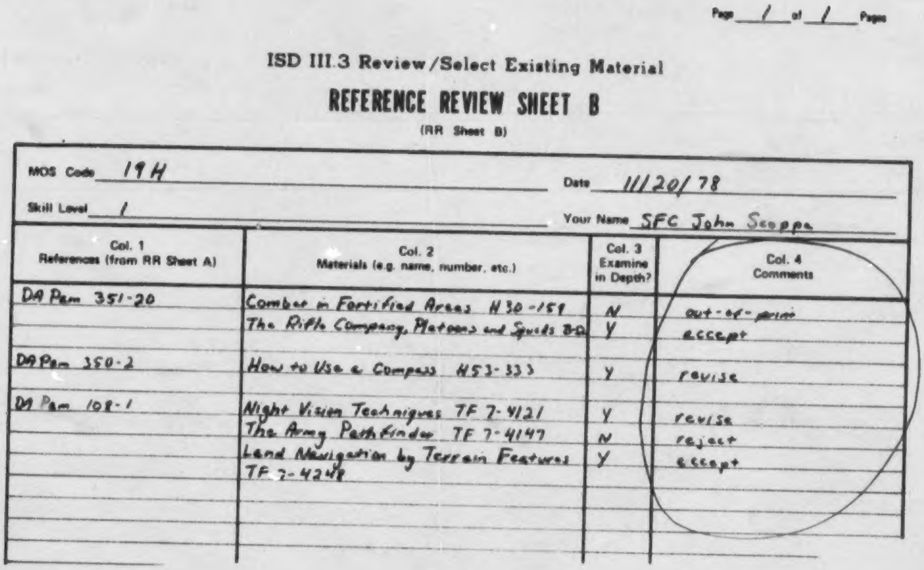
e) Will the physical condition of the materials withstand revision? For example, a film may have been cut and spliced so many times that it is completely worn out.

— It is often easier to change the delivery system and/or management plan if they do not match materials, than to change the materials themselves.

- Record your decision to accept, reject or revise the item of material in Col. 4, RR Sheet B. (Front)

What does RR Sheet B look like after I have recorded "accept," "reject" or "revise"?

Example:



Page 1 of 1 Pages

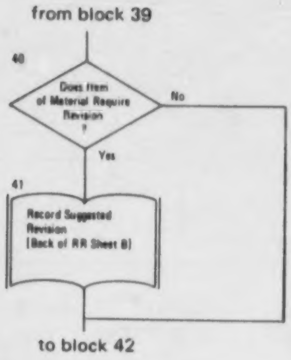
ISD III.3 Review/Select Existing Material

REFERENCE REVIEW SHEET B

(RR Sheet B)

MOS Code 19H
Date 11/20/78
Skill Level 1
Your Name SFC John Scoppa

Col. 1 References (from RR Sheet A)	Col. 2 Materials (e.g. name, number, etc.)	Col. 3 Examine in Depth?	Col. 4 Comments
DA Pam 351-20	Combat in Fortified Areas H30-151	N	out-of-print
	The Rifle Company, Platoons and Squads B-D	Y	accept
DA Pam 350-2	How to Use a Compass H53-333	Y	revise
DA Pam 108-1	Night Vision Techniques TF 7-4121	Y	revise
	The Army Pathfinder TF 7-4147	N	reject
	Land Navigation by Terrain Features TF 7-4248	Y	accept


from block 39
40
Does Item of Material Require Revision ?
No
Yes
41
Record Suggested Revision [Back of RR Sheet B]
to block 42

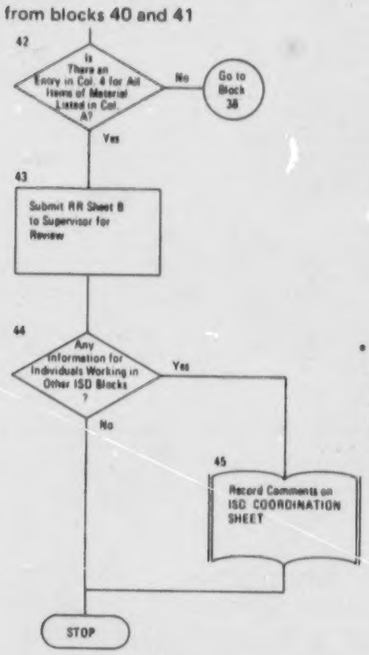
- The reviewer of existing materials records the revisions he thinks are required if material is to be used. Personnel responsible for cost decisions will later review these suggested revisions.
- For example, see below.

How do I record suggested revisions in existing material?

- Look at the reverse side of RR Sheet B. Here you will find space for recording the name of the piece of material to be revised in Column A. In Column B there is space to record the type of revision you recommend.

- **Examples of suggested revisions can be seen here.**

Name of Material	Suggested Revisions
How to Use a Compass	change from programmed text to audio-visual
Night Vision Techniques	delete slides 15 through 22, expand commentary
Battlefield Survival	reduce vocabulary level (listening)
Drill Instructor Course	reduce reading level, add illustrations


from blocks 40 and 41
42
Is There an Entry in Col. 4 for All Items of Material Listed in Col. A?
No
Go to Block 38
Yes
43
Submit RR Sheet 8 to Supervisor for Review
44
Any Information for Individuals Working in Other ISD Blocks ?
Yes
No
45
Record Comments on ISD COORDINATION SHEET
STOP

- During the review and selection of existing materials information may have been obtainted that would be useful to persons who performed activities that fed into this process. Similarly, information may have been obtained that would be useful to persons who will be engaged in Instructional Systems Development steps that follow this one.

- Comments are recorded and submitted to appropriate persons.
- For further guidance, see below.

What is the importance of preparing comments for people working in other steps of the instructional systems development process? How do I record them?

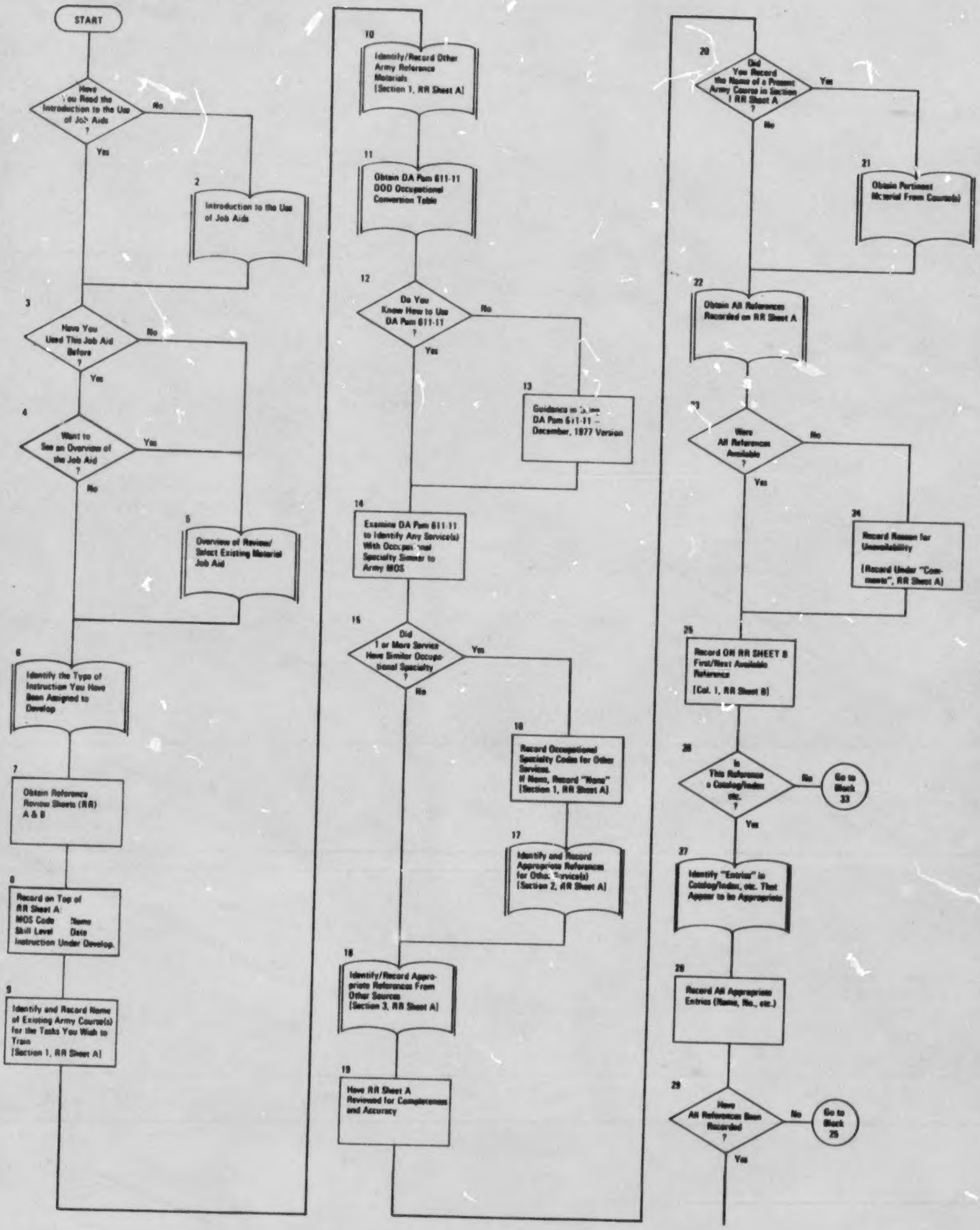
- In order for the Instructional Systems Development process to work effectively it is imperative that there be forward and backward communication between the people involved in the process. At some time or other you have probably complained about the input that had been provided to you. At other times, you may have had to do work that should have been performed in previous steps.

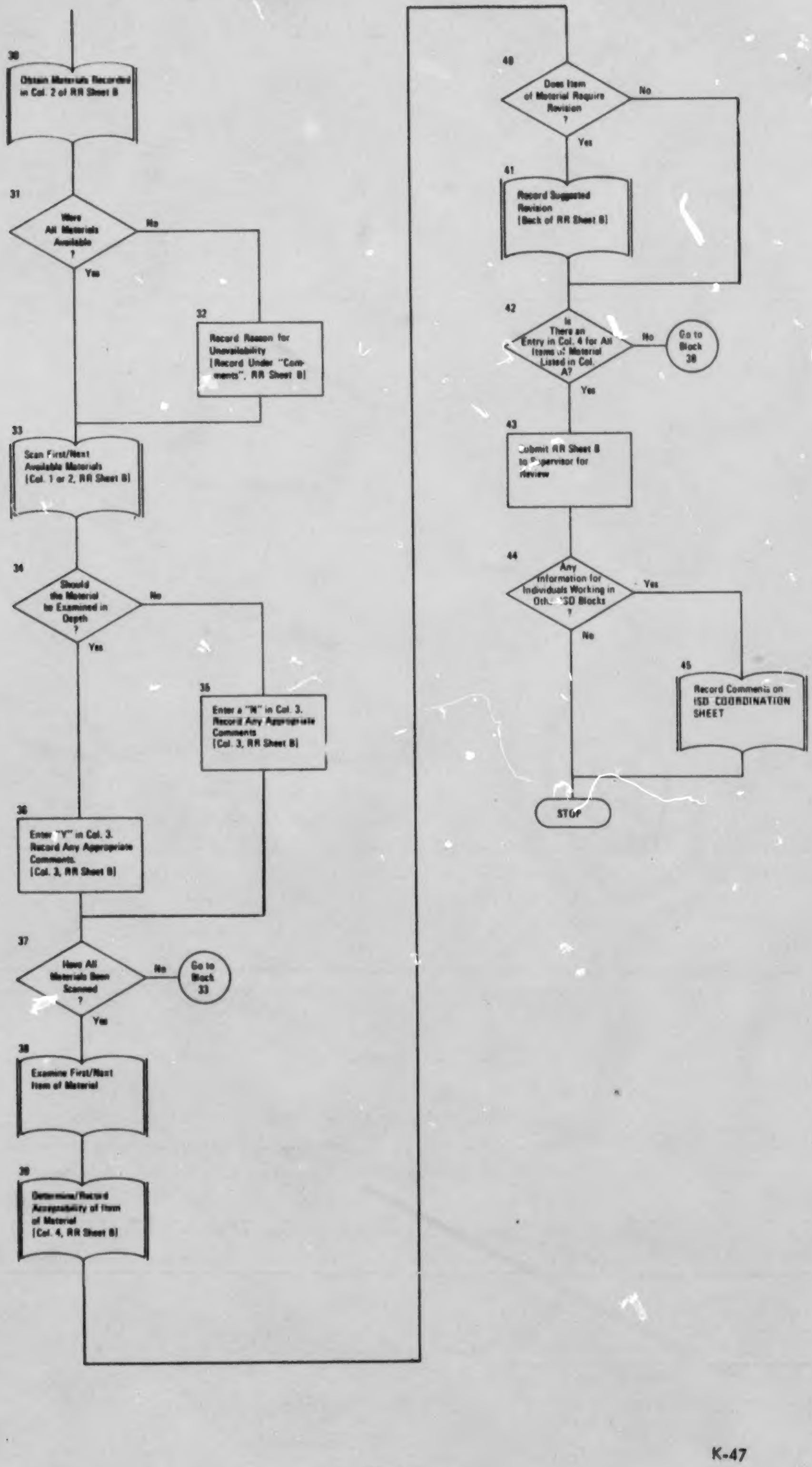
IT IS IMPORTANT THAT YOU FEED THIS INFORMATION BACK TO THE APPROPRIATE PEOPLE SO THAT REVISIONS CAN BE MADE TO EFFECT IMPROVEMENT IN THE END PRODUCT.

In your research for this step of the Instructional Systems Development process you may have discovered additional information that you think may be useful to people who will be working in steps that follow. If so, it is equally important that you pass this information on to appropriate people.

REMEMBER, COMMUNICATION WITHIN THE INSTRUCTIONAL SYSTEMS DEVELOPMENT PROCESS IS CRITICAL FOR EFFECTIVE INSTRUCTIONAL DEVELOPMENT—FOR SUCCESSFUL MISSION ACCOMPLISHMENT.

- A copy of the ISD COORDINATION SHEET can be found at the back of this manual. Make sufficient copies to enable you to send one to every individual you wish to communicate with—plus copies for your records.
- Complete the ISD COORDINATION SHEET in duplicate. Send one copy to the individual and attach one copy to the worksheets you used in this job aid.


START
Have You Read the Introduction to the Use of Job Aids ?
No
Yes
2
Introduction to the Use of Job Aids
3
Have You Used This Job Aid Before ?
No
Yes
4
Want to See an Overview of the Job Aid ?
Yes
No
5
Overview of Review/Select Existing Material Job Aid
6
Identify the Type of Instruction You Have Been Assigned to Develop
7
Obtain Reference Review Sheets (RR) A & B
8
Record on Top of RR Sheet A:
MOS Code
Name
Skill Level
Date
Instruction Under Develop.
9
Identify and Record Name of Existing Army Course(s) for the Tasks You Wish to Train [Section 1, RR Sheet A]
10
Identify/Record Other Army Reference Materials [Section 1, RR Sheet A]
11
Obtain DA Pam 611-11 DOD Occupational Conversion Table
12
Do You Know How to Use DA Pam 611-11 ?
No
Yes
13
Guidance in Using DA Pam 611-11 – December, 1977 Version
14
Examine DA Pam 611-11 to Identify Any Service(s) With Occupational Specialty Similar to Army MOS
15
Did 1 or More Service Have Similar Occupational Specialty ?
Yes
No
16
Record Occupational Specialty Codes for Other Services. If None, Record "None" [Section 1, RR Sheet A]
17
Identify and Record Appropriate References for Other Service(s) [Section 2, RR Sheet A]
18
Identify/Record Appropriate References From Other Sources [Section 3, RR Sheet A]
19
Have RR Sheet A Reviewed for Completeness and Accuracy
20
Did You Record the Name of a Present Army Course in Section I RR Sheet A ?
Yes
No
21
Obtain Pertinent Material From Course(s)
22
Obtain All References Recorded on RR Sheet A
23
Were All References Available ?
No
Yes
24
Record Reason for Unavailability
[Record Under "Comments", RR Sheet A]
25
Record ON RR SHEET B First/Next Available Reference
[Col. 1, RR Sheet B]
26
Is This Reference a Catalog/Index etc. ?
No
Go to Block 33
Yes
27
Identify "Entries" in Catalog/Index, etc. That Appear to be Appropriate
28
Record All Appropriate Entries (Name, No., etc.)
29
Have All References Been Recorded ?
No
Go to Block 25
Yes


30
Obtain Materials Recorded in Col. 2 of RR Sheet B
31
Were All Materials Available ?
No
Yes
32
Record Reason for Unavailability [Record Under "Comments", RR Sheet B]
33
Scan First/Next Available Materials [Col. 1 or 2, RR Sheet B]
34
Should the Material be Examined in Depth ?
No
Yes
35
Enter a "N" in Col. 3. Record Any Appropriate Comments [Col. 3, RR Sheet B]
36
Enter "Y" in Col. 3. Record Any Appropriate Comments. [Col. 3, RR Sheet B]
37
Have All Materials Been Scanned ?
No
Go to Block 33
Yes
38
Examine First/Next Item of Material
39
Determine/Record Acceptability of Item of Material [Col. 4, RR Sheet B]
40
Does Item of Material Require Revision ?
No
Yes
41
Record Suggested Revision [Back of RR Sheet B]
42
Is There an Entry in Col. 4 for All Items of Material Listed in Col. A?
No
Go to Block 38
Yes
43
Submit RR Sheet B to Supervisor for Review
44
Any Information for Individuals Working in Other ISD Blocks ?
Yes
No
45
Record Comments on ISD COORDINATION SHEET
STOP

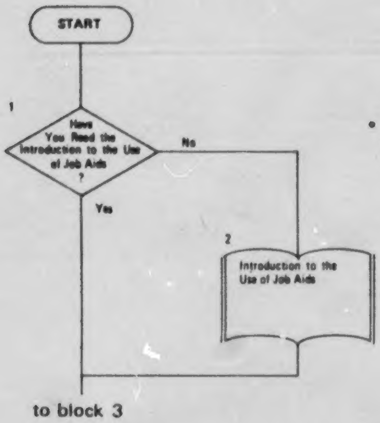
JOB AID FOR
DEVELOP INSTRUCTION

ISD III.4

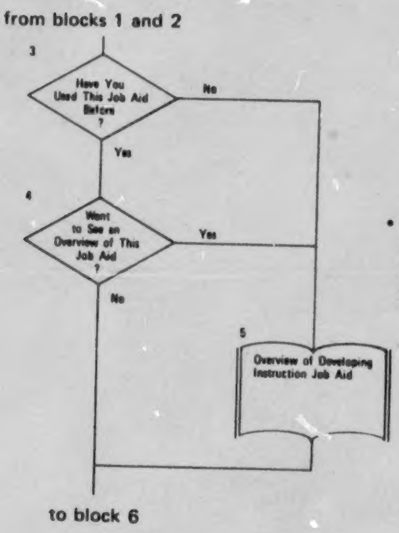
Manual

This is the 12th in a series of ISD Job Aids for use in instructional design and development. This volume is to be used as a supplement to the primary document, "Job Aids: Descriptive Authoring Flowcharts ISD III.4 Develop Instruction." The flowchart document will direct you to specific guidance, examples, and references provided in this volume. If you do not have the primary flowchart document, request it from your supervisor.

The wording in this manual should not be construed to discriminate between the sexes. In order to avoid a repetitious use of the terminology, "he/she," the terms, "he," "him," and "his," as well as "men," are intended to include both the masculine and feminine gender. Any exceptions to this usage will be so noted.


START
1
Have You Read the Introduction to the Use of Job Aids ?
No
Yes
2
Introduction to the Use of Job Aids
to block 3

- This introduction provides the user with instruction on the basic structure of the Job Aids and guidance for their use.
- Refer to Introduction.


from blocks 1 and 2
3
Have You Used This Job Aid Before ?
No
Yes
4
Want to See an Overview of This Job Aid ?
Yes
No
5
Overview of Developing Instruction Job Aid
to block 6

- Overview includes.
  - Goal
  - Objectives
  - Products
  - Major steps in process
  - Worksheets used
  - Descriptive flowchart
- For detailed overview, see below.

What is the job aid for Developing Instruction all about?

- **GOAL**

— At this point all available off-the-shelf materials have been selected and included in the instruction under development. Now you are ready to complete whatever instructional materials are still needed to produce the desired result with the trainees—the attainment of the terminal learning objectives (TLOs).

— The main goal of this job aid is to assist you in producing training materials in the following media:

- audio-only
- audio-visual
- written text

— A secondary goal is to familiarize you with the ways in which the various production personnel can help you in your efforts.

— This job aid does not cover:

1) Every type of delivery system
2) Guidance for the preparation of user instructions

For this information see TRADOC Pam 350-30, Block III.4, Develop Instruction.

OBJECTIVES

1) Given a list of learning objectives with their learning guidelines and activities, delivery system and management plan, and selected existing instructional materials, conduct the following activities:
   1) determine resource requirements
   2) sort objectives according to media
   3) develop first draft of materials
   4) use formula to determine reading grade level (written text only)
   5) revise reading level if necessary

2) Given an Instructional Development checklist indicate:
   1) the type of instruction being developed
   2) successful accomplishment of development procedures for the particular type of instruction.

PRODUCTS

— Use of this job aid will result in the production of first draft instructional materials in one of the following media:

- audio-only
- audio-visual
- written text

and a completed checklist for the appropriate media.

MAJOR STEPS IN PROCESS

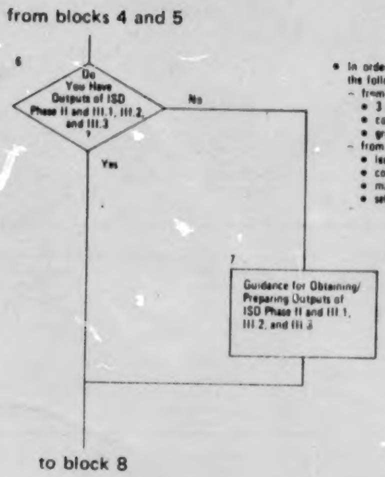
1) Determine resource requirements
2) Sort objectives
3) Select media and develop first draft materials
   - audio-only
   - audio-visual
   - written text
4) Check/revise reading level of written materials

- **WORKSHEET USED**

  — On page L-8 you will find an example of a completed Instruction Development Checklist.

- **DESCRIPTIVE FLOWCHART**

  -- The flowchart on pages L-62 thru L-63 shows the major steps in the use of the Job Aid for Developing Instruction. The flowchart will be useful to you in getting a clear picture of the overall process used in this job aid. A more completely described flowchart is provided in Job Aids: Descriptive Authoring Flowcharts, pages L-3 thru L-13.


from blocks 4 and 5
6
Do You Have Outputs of ISD Phase II and III.1, III.2, and III.3 ?
No
Yes
7
Guidance for Obtaining/ Preparing Outputs of ISD Phase II and III.1, III.2, and III.3
to block 8

- In order to develop instruction it is necessary to have the following inputs:
  - from ISD Phase II
    - 3 parts learning objectives
    - corresponding test items
    - group letter and sequence number for each objective
  - from ISD Phase III
    - learning category and subcategory for each objective
    - corresponding learning activities
    - management plan and delivery system
    - selected existing instructional materials

- The outputs of the 4 blocks at ISD Phase II and III.1, III.2, and III.3 should be available from persons responsible for those activities.
- If procedures for any of these activities were not complete Job Aids, Descriptive Authoring Flow charts may be referred to as follows:
  - Develop Objectives, pages E-3 thru E-13
  - Develop Tests, pages F-3 thru F-00.
  - Sequence and Structure Objectives, pages H-3 thru H-00.
  - Learning Categories/Activities, pages I-3 thru I-00.
  - Management Plan/Delivery System, pages J-3 thru J-12
  - Select Existing Materials, paged K-3 thru K-11

ISD III.4 Develop Instruction

INSTRUCTION DEVELOPMENT CHECKLIST

Name/Office Symbol SFC Albert Johnson Date 11/30/78
Course/Module Under Development OSUT (LAND NAVIGATION
MOS/Skill Level 12 B 1

Directions: Select appropriate media checklist and check (√) each procedure as you complete it. Attach checklist to completed first draft of lesson materials and submit to supervisor for initials and comments.

Section 1
AUDIO-ONLY

(1) Check techniques used to stimulate audio senses (check as appropriate)
- music ✓
- sound effects ✓
- dramatizations ✓
- different voices ✓
- changes in pitch ✓
  - tone ✓
  - intensity ✓
- varied pacing ✓
- other (describe)

(2) Prepare "lean" script in correct format ✓

(3) Check script for continuity and flow ✓

(4) Indicate pacing music and pauses within script ✓

(5) Other procedures (describe)

Section 2
AUDIO-VISUAL

(1) Check procedures completed for story board preparation
- visual (or written description of visual) for each L.O. ✓
- sequence of lesson laid out ✓
- Narration written ✓
- L.O. number recorded ✓
- Other (describe)

(2) Review sequence of completed storyboards ✓

(3) Indicate plans for composition of visuals ✓
- all details included ✓
- size of details ✓
- use of colors, highlights, etc ✓
- special cues ✓
- use and size of lettering ✓

(4) Consult with artist/photographer ✓

(5) Write audio portion ✓

(6) Indicate slide changes ✓

(7) Other procedures (describe)

Section 3
WRITTEN TEXT

(1) Check use of simple words and short sentences.

WORDS
- short, familiar ✓
- concrete, specific ✓
- non technical ✓
- active voice verbs ✓
- action verbs ✓

SENTENCES
- short, simple ✓
- no strings of prepositional phrases ✓
- short prepositional phrases ✓
- no extra words ✓

(2) Use performance oriented style ✓

(3) Emphasize main points
- clear main points ✓
- concise writing ✓

(4) Develop ideas clearly
- non redundant ✓
- not scattered ✓

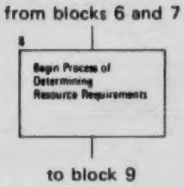
(5) Design clear format ✓

(6) Record Reading Grade Level ✓

(7) Other procedures (describe)

Supervisors Comments

Supervisor's Initials JBS


from blocks 6 and 7
8
Begin Process of Determining Resource Requirements
to block 9

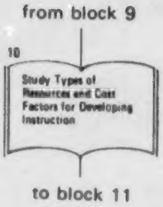
- This block begins the process of identifying
  - instructional needs
  - resources
  - constraints
- Process is accomplished in blocks 9 thru 13

from block 8
9
Determine Instructional Needs
to block 10

- Instructional needs are determined on the basis of previous analyses and planning which took place in ISD Phase II and III.
- For further information, see below.

What are the instructional needs and how do I identify them?

- The inputs of ISD, Phase II and Phase III, up to this point will tell you what is required from your instruction—what needs to be trained and how to train it. For example:
  - Learning Objectives (LOs) tell you specifically what content must be covered.
  - LO group letters and sequence numbers tell you how many modules, chapters, blocks, etc. of instruction it will take to cover this content. (Although the LOs should be considered "final" at this point, it is quite possible that you may want to revise the grouping and sequencing decisions when you actually get into producing the instruction).
  - Test items will let you know how the objectives are to be tested, both before, during, and after instruction.
  - Learning categories and the corresponding learning activities will give you a great deal of specific information as to the form and format of your instruction.
  - The management plan and delivery system will let you know exactly what media to use and how to manage the overall course of instruction.
  - The selected existing materials show you which parts of the instruction you do not need to develop because adequate material is already available for those parts.


from block 9
10
Study Types of Resources and Cost Factors for Developing Instruction
to block 11

- For types of instructional resources and cost factors, see below

---

What are the resources and cost factors which must be considered when developing instruction?

- The tables below list the types of resources and cost factors which must be considered.

Resources to Be Considered

RESOURCES
Equipment
• Instructional
• Support
Facilities
• Classrooms
• Laboratories
• Special-purpose
Manpower
• Instructors
• Instructional administrators and supervisors
• Base administration and support

Cost Factors to Be Considered

COST FACTORS
Development
Investment
• Equipment
• Facilities
Operation and Maintenance
• Equipment
• Facilities
• Pay and allowances

• DEFINITIONS OF RESOURCES AND COST FACTORS

— Equipment

a. Instructional equipment includes any item or combination of items used for instruction. Some examples include media hardware—projectors, screens, cameras, simulators, trainers, aids, etc.

b. Support equipment includes any item or combination of items needed for—but not actually part of—instruction. Some examples of support equipment are chairs, desks, typewriters, filing cabinets, and mobile power units.

— Facilities

An instructional facility is the physical complex in which instruction is conducted, or the physical area which provides for the direct support for instruction. Some examples include classrooms, laboratories, carrels, or special-purpose areas such as aircraft parking and run-up ramps, pole-climbing areas, or site-development areas.

— Manpower

Manpower includes all personnel required to accomplish the missions and workloads. Manpower requirements for an instructional system include instructors, administrative personnel, curriculum specialists, writers, instructor supervisors, media specialists, graphic artists, print specialists, TV producers, photographers, audio producers and technicians.

— Costs

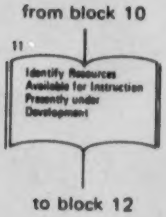
Certain costs are associated with each resource. In determining financial requirements for equipment, facilities, and manpower, consider three types of costs:

(1) *Cost of Acquiring and/or Developing the Resources.* This includes acquisition costs for instructional equipment, support equipment, facilities, and the design and development of course materials and

and any special equipment. Development costs will include pay and allowances.

(2) *The Investment They Represent.* This includes the per-student cost, and the potential for future use or reuse.

(3) *The Cost of Operation and Maintenance.* This includes cost after acquisition which may be needed to keep equipment and facilities up to standard.


from block 10
11
Identify Resources Available for Instruction Presently under Development
to block 12

- For guidance in identifying available resources, see below.

How do I identify available resources?

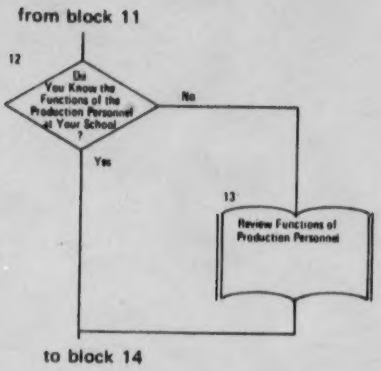
- At this point a final check should be made to insure that the required resources are definitely available. It certainly would be ill-advised to plan for a certain format of instruction and then find out that resources once thought to be available will not be available.

- You can identify available resources by doing the following:

  1) Obtain copies of the production facilities documentation regarding development of classroom instruction, video instruction, audio instruction, slide-tape presentations, demonstrations, computer applications, and any other additional materials of this type. Local regulations or servicewide regulations may exist relative to the acceptable format for presenting materials for processing. Where these are available, be sure to obtain copies. Most of these publications have not been developed within an Instructional Systems Development Model context. While they may have to be adapted to your needs, they still should prove extremely helpful.

  2) Find out how to get the subject content into a form that the production facility can easily use. For printed materials this may include length of typed lines permissible, page numbering locations, etc. For audio material, a script must be prepared in a format acceptable to narrators. Visual materials require an idea of what the final form will be—still slide, film-loop, video tapes, etc.

  3) Find out how much assistance can be expected from the production facility. Get as much information as possible on how they would suggest developing the particular instruction. Production facility personnel require that ideas be presented in a form they can understand because that is what is used as the basis for judging their costs and their requirement for experienced personnel. From the description of planned new instruction, it will also be possible for them to give an elapsed time estimate. From this estimate, you may decide to accept some suggested alternatives that may be almost as good, or perhaps better, than what was originally planned. Though general alternatives should have been selected in Block III.2, there are production alternatives as well.


from block 11
12
Do You Know the Functions of the Production Personnel at Your School ?
No
Yes
13
Review Functions of Production Personnel
to block 14

- For description of functions of the
  - media specialist
  - graphic artist
  - print specialist
  - photographer
  - audio producer (engineer)
  - technician
- For further guidance, see below

What are the functions of production personnel?

- The following list provides a general description of the functions of production personnel who can provide assistance in the actual development of instructional materials.

1. Media Specialist (Consultant). Media specialists often oversee and direct media center personnel. The media specialist is usually knowledgeable in all areas of media selection, identification of unique media and stimulus characteristics, feasibility of different media for various instructional purposes, media production costs, use of hardware and accompanying software, and location of media software (re: films, television programs, etc.) on a wide variety of subjects. The media specialist may be particularly useful in helping to find existing materials in the content areas. The media specialist also should be able to provide valuable suggestions before the development of first draft materials has begun to save both time and money.

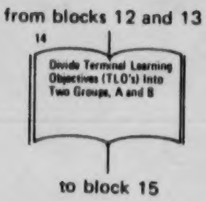
2. Graphic Artist. Since a large portion of media productions usually involves some artwork in the form of graphs, charts, diagrams, or pictures, the artist is another media professional whose assistance will be valuable. The graphic artist can usually be called upon to do a variety of illustrations of different sizes from small pamphlets to large poster size artwork. Most artists also can produce various sizes and styles of printed lettering. The graphic artist also probably can advise or give suggestions on the most effective way to visualize the instructional message. Usually an artist is capable of producing sketches in rough form which will be quite suitable for the production of first draft materials.

3. Print Specialist. The print specialist is skilled in the development, arrangement, and production of a wide variety of print materials ranging from pamphlets and brochures to books. The print specialist can assist in deciding how to reproduce large amounts of material as economically as possible without undue sacrifice of quality. He will advise on the feasibility, cost, and preparation of various types of artwork in either color or black and white. In general this person should be consulted on any matter involving the production and duplication of printed materials.

4. Photographer. The photographer is capable of handling a wide variety of picture taking assignments and is versatile in developing and printing pictures. Much creative photography is done in the darkroom rather than with the camera; therefore, if any special photographic effects are needed, discuss it with the photographer. It would be helpful to show the photographer an actual example (from a past production or magazine pictures, etc.) of what is needed.

5. Audio Producer (Engineer). The audio producer is responsible for producing audio tapes, audio cassettes and studio recordings. The producer knows what type of microphones are suitable for different applications. The audio producer can assist in all production phases but will be most helpful in preparing the final integration of the production where the narration, music, and other audio sounds are combined. The audio producer will make certain the audio production is crisp and clear with no unnecessary background noises or static and that music and voices are well modulated.

6. Technician. The (electronic) technician is a specialist in the repair and maintenance of electronic equipment such as audio consoles, video switchers, cameras, and tape recorders. The technician repairs equipment and is familiar with the reliability of different makes of audiovisual hardware. Before purchasing equipment, seek the technician's advice. It could save needless expense later on. The technician also can familiarize the instructional designer with the operation of production facility equipment. The technician also may be versed in the development of new equipment and in the reliability and technical problems with different makes of new "state-of-the-art" equipment.


from blocks 12 and 13
14
Divide Terminal Learning Objectives (TLO's) Into Two Groups, A and B
to block 15

- TLO's are initially sorted into two groups:
  A) those for which unstructional materials are available
  B) those for which instructional materials must now be developed
- For further information, see below.

What is the purpose of initially sorting Terminal Learning Objectives (TLO) into two groups?

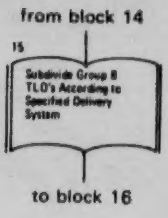
- Before beginning to develop instruction you must know exactly with which learning objectives (LOs) you will be working. It is possible that some off-the-shelf materials were located in ISD III.3, Select Existing Materials, which are perfectly adequate, as is, for training some of the Terminal Learning Objectives (TLOs). If so, separate those TLOs from the ones for which you must still develop instruction, or for which only a few useful parts of existing materials were available, such as a series of slides, graphs, etc. The TLOs for which you have available adequate instruction may be set aside until the total training program is put together.

- Thus, you now have two groups of objectives:

  Group A—Those for which adequate instructional materials are already available.

  Group B—Those for which no, or only partial, instructional materials are available.

- It may be necessary to separate some learning objectives from their terminal learning objective in the event that existing materials are available for some of the LOs and not for others.


from block 14
15
Subdivide Group B TLO's According to Specified Delivery System
to block 16

- TLO's for which new instruction must be developed are now sorted according to the media which were selected in ISD Block III.2 to train them.
- For further information, see below.

What is the purpose of sorting objectives according to type of media?

- In the last step you divided the LOs into Groups A and B. In this step you are only working with the Group B objectives, those for which you are going to prepare instructional materials. These LOs will be worked on one group at a time, according to their media categories.

- **SUBDIVIDE GROUP B OBJECTIVES**

  — In order to develop new instruction for these LOs, you need to subdivide them into media categories which are compatible with the delivery systems selected in ISD III.2, Specify Instructional Management Plan and Delivery System. Many different delivery systems may have been selected for the Group B objectives. Use the following procedure for subdividing objectives:

  1) Select an objective (LO)
  2) Fit the delivery system suggested for this objective into one of the broader categories of media listed below:

- **AUDIO-ONLY**

  Audio-only scripts are prepared as part of instructional programs where soldiers may be listening to directions or explanations on an audio tape while they are performing or being guided through a task.

- **AUDIO-VISUAL (specifically slide-tapes)**

  The slide-tape is a combination of slides accompanied by a tape recorded narration explaining and describing the slides. A synchronizing pulse is placed on the audio tape to synchronize the audio and the visual. The pulse is recorded on the tape by the audio producer or technician. It can be either audible for manually advancing the slides or inaudible and automatic.

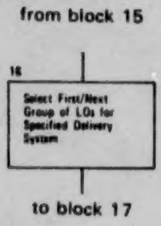
  The slide-tape is one of the most widely used of all audio-visual productions because it is relatively inexpensive to make, elaborate equipment is not required, and it is not difficult to reproduce. Many Training Extension Course (TEC) lessons are developed for use with the Bessler Cue/See projector.

- **WRITTEN TEXT**

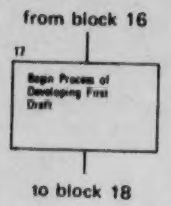
Written text includes any type of written lesson materials such as textbooks, pamphlets, manuals, circulars, lesson modules, etc. (Programmed Instruction requires a very special type of writing skills and is not included in this job aid. However, many of the principles for developing good written text can be applied to the writing of Programmed Instruction.

- **OTHER**

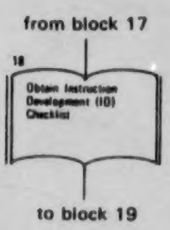
If the delivery system is similar to one of the above you may group the objectives with the similar system. Otherwise, place them under "Other." This job aid will be useful only as a guide to the general principles of instructional development. It can not be used as a procedural guide.


from block 15
16
Select First/Next Group of LOs for Specified Delivery System
to block 17

- A group of learning objectives for a particular delivery system is selected.


from block 16
17
Begin Process of Developing First Draft
to block 18

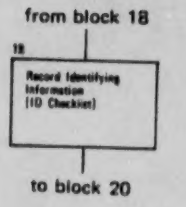
- This block begins the actual development of instruction.


from block 17
18
Obtain Instruction Development (ID) Checklist
to block 19

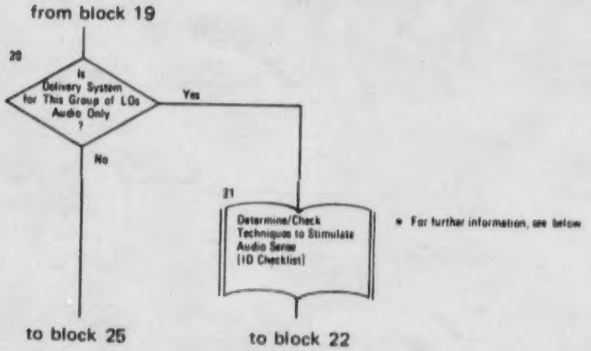
- Instruction Development Checklist is used to document Steps in preparation of first draft materials.
- For guidance in obtaining ID checklist, see below.

Where can I get an Instruction Development Checklist?

- **The Instruction Development Checklist is available for duplication in the pocket at the end of this manual.**
- **To see an example of a completed ID Checklist, refer to page L-8 .**


from block 18
19
Record Identifying Information (ID Checklist)
to block 20

- Identifying information includes:
  - Your name/Office symbol
  - Date
  - Course/Module under development
  - MOS/Skill Level


from block 19
20
Is Delivery System for This Group of LOs Audio Only ?
Yes
No
21
Determine/Check Techniques to Stimulate Audio Sense (ID Checklist)
• For further information, see below
to block 25
to block 22

What is the purpose of using special techniques to stimulate the audio sense?

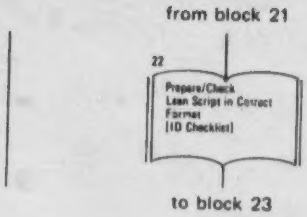
- Remember the limitations of the medium

  Since there is no video, you want to use techniques that will stimulate the audio senses:

  — music
  — sound effects
  — dramatizations
  — different voices
  — changes in pitch, tone, and intensity of voice
  — pacing

  However, do not overuse a technique. After preparing a script take it to the audio producer for his advice on how to make it most effective.

- For example of what the ID Checklist looks like when techniques used to stimulate the audio senses are selected and checked, see page L-8. Note Section 1, number 1.



- For further information, see below.

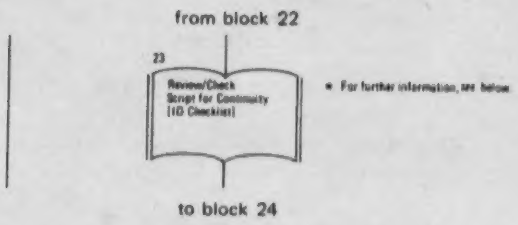
How do I prepare a lean audio script in correct format?

- Examine each learning objective and write just enough of an explanation to clarify each item. Do not write more than is needed, as you can always add more after the first draft materials have been tested. It is not efficient to write any more than necessary for two reasons:
  1) Loss of time to the course writer and the student.
  2) When lesson materials are tested it is easier to identify problems due to lack of sufficient information than to identify excess information.
- When writing the final version of a script, use the format shown below. Note that the right side of the script contains all of the spoken narration that will be heard. The left side is for specific directions such as adding music or sound effects.

Format for Audio Script

Directions	Narration
Include any special directions on the left side of the script. These could be music, sound effects, or any other outside sources which will be added to the final script.	Write the audio that will be read by the narrator on this side of the script. Also, write any special directions for the narrator on this side of the script. For example, include changes in pace, tone or intensity of voice and indicate them in brackets [ ]. THE PART OF THE SCRIPT TO BE READ IS WRITTEN IN CAPITAL LETTERS. [Directions to the narrator are written in lower case letters]

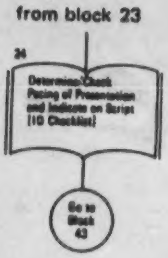
- For example of what the ID Checklist looks like when you have prepared a lean script in the correct format, refer to page L-8. Note Section 1, number 2.


from block 22
23
Review/Check
Script for Continuity
(ID Checklist)
• For further information, see below
to block 24

How do I check the audio script for continuity?

- **If possible, have someone read the script to you, or at least read it aloud to yourself. Do the ideas flow, or does the script seem disjointed? If any part seems unclear or too sparse, add or delete information where necessary.**

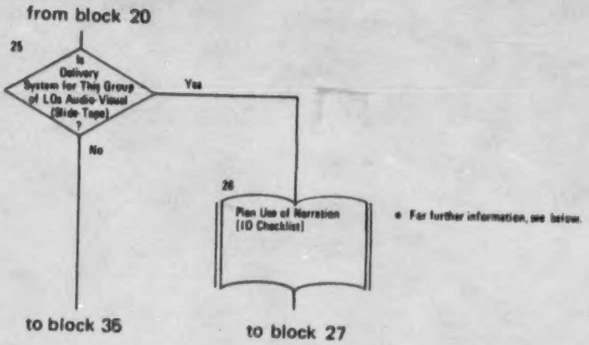
- **For example of what the ID Checklist looks like when you have checked the script for continuity, see page L-8. Note Section 1, number 2.**


from block 23
24
Determine/Check Pacing of Presentation and Indicate on Script [ID Checklist]
Go to Block 43

- For further information, see below.

How do I determine the pacing music and pauses of the presentation and indicate this on the script?

- Decide where changes in the pace of the presentation can best be used to highlight the script and maintain listener interest. For example:
  - — If you want to tell the audience what an air raid siren sounds like, do not describe its frequency and pitch. Instead, use a blast of a siren.
  - — Rather than simply explaining the contents of a speech, use a dramatization.
  - — Use appropriate music to bridge the gap between different parts of the program. (When using music, remember that the music should not attract undue attention but should complement the narration.)
  - — If pauses in certain parts of the script are necessary, indicate these on the script. Also indicate if normal pacing changes—either faster or slower.
- Indicate directions for pacing in lower case letters and brackets [ ] on right hand side of script.
- For example of what the ID Checklist looks like when you have indicated the pacing, music and pauses within the script, see page L-8. Note Section 1, number 4.


from block 20
25
Is Delivery System for This Group of LOs Audio-Visual (Slide-Tape) ?
Yes
No
26
Plan Use of Narration (ID Checklist)
• For further information, see below.
to block 35
to block 27

How do I plan the use of narration for a slide tape audio-visual production?

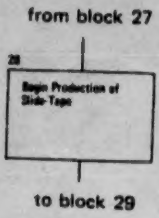
- This job aid covers the production of slide-tape programs such as are used with the Bessler Cue/See projector. With this medium you want to be sure that the visual and audio work together to present the lesson. Keep in mind the following points when planning your narration.
  - Narration (audio) should be used to explain details, suggest relationships, or supply any kind of information that cannot be adequately explained in the visuals.
  - The narration should always be related to the visual being seen. The narration should not compete with the visual by describing or calling attention to details not in the visual. If in doubt, ask yourself "does the narration complement the visual?" If the answer is no then rewrite the narration until it does.
  - Use the narration to identify or describe the content of a visual as soon as the visual appears. Do not make the audience guess what the content of a visual is all about. Tell them.
  - Narration should always be simple. Do not use long, complicated sentence structures with multiple clauses. Use a simple vocabulary. Try and strike a balance between brevity and simplicity without talking down to the audience.
  - Vary the pace of the narration: Allow for breaks of silence to bridge different visuals or use short musical bridges that serve to vary the pace of the program. But remember, the music should complement the overall pace of the program. Do not use loud or boisterous music that will distract from the visual portion of the program.

from block 26
27
Plan Use of Visuals
(ID Checklist)
to block 28

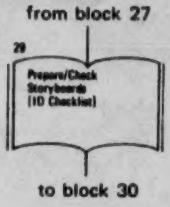
- For further information and guidance, see below.

How do I plan the use of visuals for a slide-tape program?

- No single visual (i.e., slide) should be on the screen too long. After approximately 20 seconds the audience tends to become bored and restless and easily distracted from the program. Remember this when planning the slide-tape production and avoid writing 40 seconds of narration for a visual that should not be on the screen longer than 20 seconds. If a longer time period is needed to explain a visual, a second similar visual can be planned to follow the first one. The second visual can be taken from another angle or be a different size than the first one. In any case, it should be different in some way but still be logically related to the first one. Also, try to vary the pacing of the program by having slides on the screen for different periods of time. When designing a program, do not think of technique first but do remain aware of the fact that the program should be lively and interesting.


from block 27
28
Begin Production of Slide-Tape
to block 29

- This block begins the actual production of the audio-visual lesson.



- Rough sketches or stick figures are called storyboards.
- For further information and guidance, see below.

How do I prepare story boards?

- **Now that you have done some planning for the audio and visual aspects of your lesson you are ready to start the actual production of the slide-tape. Follow the sequence suggested below:**

  1) **Examine each learning objective to determine what visual will explain it best. Then draw a rough sketch to communicate with the artist or photographer your idea. Rough sketches or stick figures are called story boards. (An alternative is to write a detailed description of what content the visual should contain.**

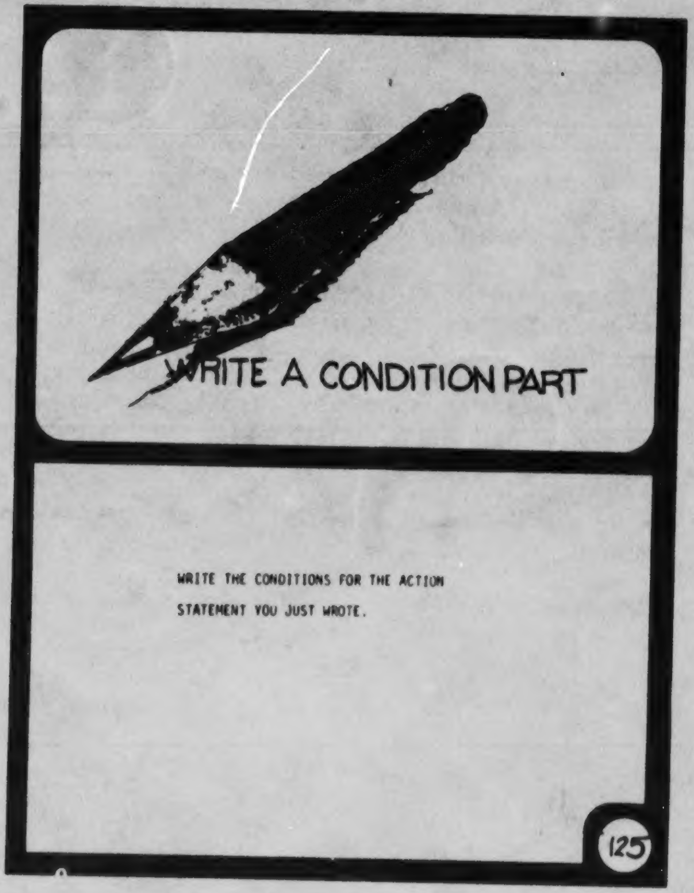
  2) **Mount a sequence of sketches on a board so that the outline of the sequence of your lesson can be illustrated (layout).**

  3) **In addition to the sketch, which is placed at the top of the story board, write on the bottom of the story board the narration which will accompany the slide. If music is to accompany the slide indicate this also. See page L-32 for example of completed story board frame.**

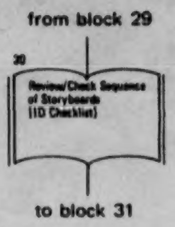
  4) **Record the number of the Learning Objective that the story board relates to.**

- **For example of what the ID Checklist looks like when these steps in the production story boards have been completed. See page L-8.**

Example of completed story board frame.


WRITE A CONDITION PART
125

WRITE THE CONDITIONS FOR THE ACTION STATEMENT YOU JUST WROTE.


from block 29
30
Review/Check Sequence of Storyboards (ID Checklist)
to block 31

- For further information and guidance, see below.

How do I review the sequence of the story boards?

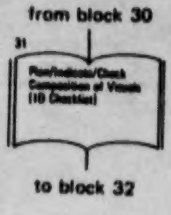
- The combination of all the story boards forms the script for the slide-tape program. Therefore you want to review the sequence of the story boards.

  — Visualize the sketches on each story board. Ask yourself:

  1) Does each picture and accompanying narration follow a logical sequence?
  2) Are there any ambiguities, or gaps where information is missing?
     If so, add more pictures or narration.

  — Run through the sequence several times to check the order.

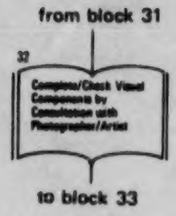
- For example of what the ID Checklist looks like when you have reviewed the sequence of your completed story boards, see page L-8. Note Section 2, number 2.



- For further information and guidance, see below.

How do I plan and indicate the composition of the visuals?

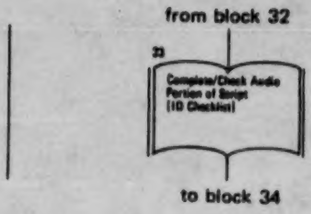
- **As you complete the activities below, check them off the ID Checklist (Section 2, number 3)**
- **Be sure to provide the photographer or graphic artist with enough information as to the composition of the visual. He needs to know your plans for such things as:**
  - **— What details are included**
  - **— Size of the details (should certain parts of a picture be photographed in close detail or magnified (blow-ups))?**
  - **— Use of colors, highlights**
  - **— Use of arrows, circles, numbers or other techniques to clearly delineate one part from another (special cues)**
  - **— Use and size of lettering on photos, diagrams, etc.**
- **Indicate this information on the picture part of the story board.**
- **For example of what the ID Checklist looks like when you have planned the composition of the visuals, see page L-8. Note Section 2, number 3.**


from block 31
32
Complete/Check Visual Components by Consultation with Photographer/Artist
to block 33

- For further information and guidance, see below

What is the purpose of consulting with the photographer or graphic artist?

- Whether your story boards call for the use of photos or drawings, each frame should now indicate the exact composition of the desired visual.
- For Photographs
  - If your story boards call for photographs, take them to the photographer so he can begin taking pictures.
  - If he has to take on-location shots it may be necessary to accompany him to the location.
  - If he is to produce slides from books or manuals provide him with all necessary details.
- For Drawings
  - If some of the slides require the production of graphs or diagrams, take these story boards to the graphic artist so he can begin drawing.
  - When the artist has drawn the visuals, take them to the photographer to have them photographed.
- You should now have completed all the visual components of the slide-tape program.
- After you have completed the above, check Section 2, number 4 of the ID Checklist.
- For example of what the ID Checklist looks like when you have consulted with the photographer/artist on visual components, see page L-8. Note Section 2, number 4.



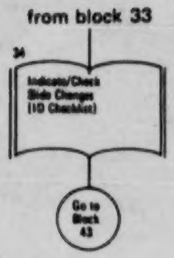
- For further information and guidance, see below.

How do I complete the audio portion of the script?

- **You already have the narration on each frame of the story board. To write the audio portion of the script, simply copy this narration onto the script.**
- **Take the completed audio script to the audio producer who will arrange to have a narrator do the reading.**
- **Note the Audio-Visual Format below.**
- **For example of what the ID Checklist looks like when you have completed the audio portion, see page L-8. Note Section 2, number 5.**

Format for an Audio-Visual Script

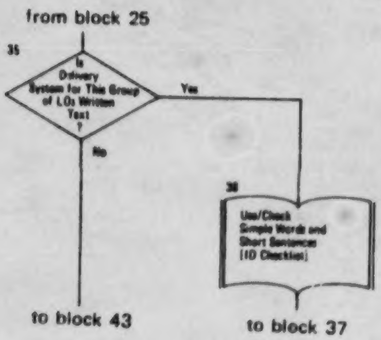
VIDEO	
All the visual sequences of the program are written on this side of the script. Story board pictures can be illustrated on this side of the script to correspond with the narration.	All narration and specific directions for the narrator are listed on this side of the script. In an audiovisual script all special directions that have anything to do with audio such as music are written on the right-hand side.


from block 33
34
Indicate/Check Slide Changes (ID Checklist)
Go to Block 43

- For further information and guidance, see below.

How do I indicate the slide changes?

- **The final production step is to indicate on the audio script where the slides should change.**
- **Make a small "x" (or other similar type mark) on the audio script where the slide is to change.**
- **This mark will provide the audio producer with the required information for synchronizing the audio and visual components of the program.**
- **For example of what the ID Checklist looks like when you have indicated the slide changes, see page L-8. Note Section 2, number 6.**


from block 25
35
Is Delivery System for This Group of LOs Written Text ?
Yes
No
36
Use/Check Simple Words and Short Sentences (ID Checklist)
to block 43
to block 37

- For further information and guidance, see below.

What is the purpose of using simple words and short sentences?

- Your purpose in developing instructional materials is to help the student to reach the terminal learning objective and its prerequisite learning objectives. The more effectively you can communicate with him, the more likely he is to learn from your instruction. Therefore, it is important NOT to exceed the student's reading level (or vocabulary level if your instruction is audio-only).

  Writing that is easy to read is usually easy to understand. You should use words that the student is familiar with, and put them into fairly short, uncomplicated sentences.

  The following list of guidelines for lowering the reading difficulty level of your instruction is divided into two sections: (1) Word Selection and (2) Sentence Structure. (Later you will be given a formula for actually measuring the reading grade level of your materials).

WORD SELECTION

1. Use SHORT, FAMILIAR words when possible.

Poor Choice	Better Choice
accordingly	so
assistance	help, aid
facilitate	help, ease
utilization	use
feasible	possible
implement	carry out

Reading studies show that short, familiar words tend to communicate better.

2. Use CONCRETE, SPECIFIC words.

Poor Choice	Better Choice
aircraft	B-52
majority of soldiers	95% of soldiers
physical needs	hunger and thirst
weapon	M-16

Abstract words mean different things to different people. Therefore, they can make your intended meaning unclear. Concrete words communicate more easily and precisely.

3. Use NON-TECHNICAL words.

Poor Choice	Better Choice
clavical	collar bone
NCOIC	non-commissioned officer in charge
terrain	ground
experimentation	test

When a technical word cannot be replaced by a non-technical word, and you think the word is unfamiliar to your student, explain the technical word in a separate sentence either directly before or directly after its first appearance.

Of course, if your student has a technical background in the area of your instruction, technical terms are appropriate.

In the case of military abbreviations, it is sufficient to write out the complete term followed by its abbreviation in parentheses the first time; and to use the abbreviation every time afterwards.

Example: The non-commissioned officer in charge (NCOIC) gave the order. The NCOIC told the men to shine their boots.

4. Use ACTIVE voice verbs.

Poor Choice: The statement must be updated every three months.

Better Choice: You must update the statement every three months.

Poor Choice: The truck will be driven by Specialist Jones.

Better Choice: Specialist Jones will drive the truck.

This suggestion does not mean that you must never use the passive voice. However, it should be avoided when you are writing instructions and procedures, as in the first example; otherwise, the job may not get done! ("Who is to update the statement," is important to your meaning.)

5. Avoid changing action verbs into nouns.

Poor Choice: It has been pointed out that, in the Army, careful initial *selection* and *classification* are important procedures in *eliminating* maladjusted personnel.

Better Choice: If the Army selects and classifies personnel carefully, it will have fewer maladjusted people.

When verbs are changed into nouns it is difficult to tell "who did what to whom."

SENTENCE STRUCTURE

1. Use short, simple sentences.

Poor Choice	**Better Choice**
In the case of the habitual offender, there is nothing to do but remove him from the Service; needless to say, he is what might be termed ineffectual as an officer.	Remove the habitual offender from the Service. He is not an effective officer.

---

2. Avoid strings of prepositional phrases. Example: The hand of the man on the roof of the house.

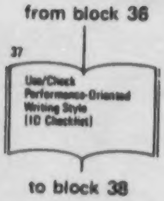
3. Shorten prepositional phrases.

Poor Choice	Better Choice
in a manner similar to	like
with reference to	about
in view of the fact	since
with due regard for	for
in a situation in which	when

4. Avoid wasteful words.

Poor Choice	Better Choice
are desirous of	want to
gained from the following source	from
it is recommended that consideration be given to	we recommend that you consider
is responsible for selecting	selects
make provision for	provide for
take appropriate measures	act; do
the fullest possible extent	the most
afford an opportunity	allow

- **For example of what the ID Checklist looks like when you have checked your writing for short, simple words and sentences, see page L-8. Note Section 3, number 1.**



- For further information and guidance, see below.

How do I develop a performance-oriented writing style?

- **Avoid Topic-Oriented Style**
  - Topic-oriented writing places heavy demands on the reading, studying, and conceptualizing skills of the user.
  - Topic-oriented writing focuses on the generalizations and concepts which constitute a body of knowledge—it tells "about" a subject area rather than telling "what to do" or "how to do it".
  - Topic-oriented materials do not identify a particular user audience. A topic-oriented manual is frequently described as a general reference text, intended for anyone from Private to General.
  - Topic-oriented writing does not identify subject-related duties and tasks, who might be expected to perform them, or how any given user might perform them. The description of the "body of knowledge" may carry implications for duty and task performance for everyone from the Private to the Unit Commander. However, it's left up to the reader to deduce from this description what duties and tasks should be performed, how they should be performed, and who should perform them.

- **Do Develop Performance-Oriented Style**
  - Performance-oriented writing minimizes demands on the reading, studying, and conceptualizing skills of the user.
  - Performance-oriented writing focuses on the duties and tasks a user is expected to perform and the information he needs in order to perform these duties and tasks—it tells the user, "what to do" and where possible, "how to do it".
  - Performance-oriented writing identifies a particular user audience. To write performance-oriented literature you start by identifying who you expect the major user to be and the subject-related duties and tasks this user will perform. You then translate your knowledge of the subject area into the information and directions this user will need to learn and perform the duties and tasks you have identified.

- In performance-oriented writing, information is selected from the "body of knowledge" and organized to place major emphasis upon its application to duty and task performance. It "talks" directly to the user, the duties and tasks he is expected to perform, and how he can perform them. As a result, performance-oriented literature has greater relevance to a job training or job performance setting than topic-oriented literature. The reader does not have to strain the information he needs out of the general pot of knowledge and then wrestle with the "so what should I do about it" question.

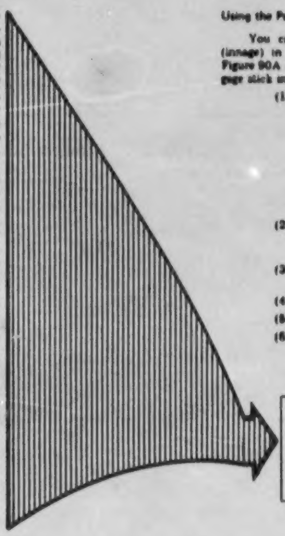
EXAMPLES OF TOPIC-ORIENTED WRITING VERSUS PERFORMANCE-ORIENTED WRITING

TOPIC-ORIENTED WRITING

This passage attempts to explain how spontaneous combustion occurs. Note how general this information is and how it is presented completely separate from any duty or task performance context.

EXAMPLE 3-A: TOPIC-ORIENTED WRITING

1. Spontaneous Heating. Heating of a combustible material, or combination of materials, is described as spontaneous if inherent characteristics of the materials cause a heat-producing chemical action without exposure to external sources of heat. The process is spontaneous combustion if ignition occurs. The causes of spontaneous heating are few, but the conditions under which they operate are many and varied. More than one factor may be operative in some cases, and one may be conducive to another. Technical information as to the exact details is limited. Laboratory tests are often inconclusive because of the difficulty of duplicating operating conditions. It is unsafe to conclude that a material will not heat spontaneously because it has not done so under a given set of circumstances. The process usually starts with a slow chemical reaction, or slow oxidation, which generates some heat. The process accelerates as heat builds up until rapid oxidation takes place. Ignition may occur after days or weeks, during which the temperature has been slowly increasing. The process can and does proceed in various materials without dangerous effects if the heat generated can be dissipated. If dissipated as fast as generated, ignition cannot occur. Ventilation is therefore an important factor. On the other hand, complete lack of ventilation is a positive deterrent. Complete absence of ventilation would not prevent spontaneous heating and ignition if a chemical source of oxygen were present. The most common instance of spontaneous heating is that which takes place in oil- or paint-soaked waste or rags, particularly those soaked with linseed oil and paint driers. Oily waste and rags should not be left in lockers or supply cupboards; they should be collected in airtight metal containers for safekeeping until disposed of.



VERSUS

PERFORMANCE-ORIENTED WRITING

This example shows how the writer of the topic-oriented passage on Spontaneous Heating might have handled this material if he had been writing a performance-oriented manual for the petroleum handler.

EXAMPLE 3-B: PERFORMANCE-ORIENTED WRITING

Using the Petroleum Gage Stick to Find Innage

You can use the petroleum gage stick to find the height of a product (innage) in small horizontal tanks, nonpressure tank cars, and tank vehicles. Figure 90A shows the current position of the gage stick in the tank. Use the gage stick in this way:

(1) Lower the stick into the tank vertically.

NOTE:

(a) Lower the stick with care so that it does not make a splash. A splash can cause a cut on the stick which will give you the wrong reading.

(b) Make sure that the stick rests on the bottom and not on a rivet head or other projection inside the tank.

(2) When you gage a small horizontal tank which has a reference point, note whether the reading on the gage stick at the reference point is the same as the reference height of the tank.

(3) Take out the stick and read the product cut on the stick. Record this figure as the innage gage.

(4) Clean the stick at the cut by wiping with a cloth.

(5) Lower the stick again and take a second reading.

(6) Clean the stick with the cloth.

CAUTION

Do not leave oily rags lying around or in lockers or supply cupboards. They may start heating and when they become hot enough they burst into flames. Put oily rags in airtight metal containers until you can get rid of them.

EXAMPLE:

Topic-Oriented Writing

e. Crew Duties.

(1) *Vehicle commander.*

(*a*) Since the conventional round can be fired from a stationary vehicle or a moving vehicle in the stabilized mode, after acquiring a target the vehicle commander must issue directions to the driver before issuing the initial fire command. If the vehicle commander desires to fire from a stationary vehicle, he announces DRIVER STOP. If the vehicle commander desires to continue moving while firing he announces STABILIZED, and then issues the fire command.

(*b*) Acquires target, issues directions to driver, estimates range to target, issues an initial fire command, and lays gun/launcher for direction.

(*c*) When the gunner announces IDENTIFIED, vehicle commander releases control of turret to gunner and takes up a position to observe fire. When firing conventional ammunition, the vehicle commander should brace himself against reaction of the vehicle to shock produced by firing. After initial shock, the vehicle commander may take up his binocular and attempt to sense the round if the target is beyond 1,200 meters. If the target is nearer than 1,200 meters, the vehicle commander should attempt to sense the round without aid of a binocular.

(*d*) Adjusts fire as necessary.

(*e*) Terminates engagement by announcing CEASE FIRE or TARGET—CEASE FIRE.

Performance-Oriented Writing

(M551 ARMORED RECONNAISSANCE/AIRBORNE ASSAULT VEHICLE, AR/AAV)

e. CREW DUTIES DURING TARGET ENGAGEMENT

(1) Duties of the vehicle commander

(a) The vehicle commander picks a target.

(b) He decides whether to fire with the vehicle moving or stopped. If he wants to fire while the vehicle is stopped, he says DRIVER STOP. If he wants to fire while the vehicle is moving, he says STABILIZED.

(c) He estimates the range to the target, and gives a fire command. Then he lays the gun/launcher for direction.

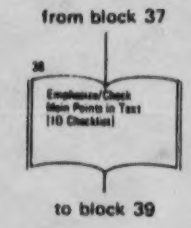
(d) When the gunner says IDENTIFIED, the vehicle commander gives control of the turret to him.

(e) The vehicle commander gets in place to watch the fire. He must brace himself against the shock that firing makes in the vehicle. After the shock, he tries to sense the round. He may use his binoculars if the target is more than 1200 meters away.

(f) He adjusts fire as needed.

(g) He says CEASE FIRE or TARGET-CEASE FIRE to end the firing.

- For example of what ID Checklist looks like when you have checked your writing for performance-oriented style, see page L-8. Note Section 3, number 2.



- For further information and guidance, see below.

How do I emphasize the main points in the text?

- As you write a paragraph, you should make sure that your main points stand out clearly. Don't let your writing become vague or wordy.

    a) Avoid Writing Which Is Too Vague

    A passage is vague when it lacks proper subordination. Main points and secondary points are run together as if they were equally important. The reader must handle several "equal" details rather than a few main points together with the information which supports each of them. The passage lacks needed emphasis.

For Example:

Vague Writing

c. *Crew Duties.*

(1) *Vehicle commander.*

(a) Since the conventional round can be fired from a stationary vehicle or a moving vehicle in the stabilized mode, after acquiring a target the vehicle commander must issue directions to the driver before issuing the initial fire command. If the vehicle commander desires to fire from a stationary vehicle, he announces DRIVER STOP. If the vehicle commander desires to continue moving while firing he announces STABILIZED, and then issues the fire command.

Clear Writing

CREW DUTIES DURING TARGET ENGAGEMENT

(1) Duties of the vehicle commander

(a) The vehicle commander picks a target.

(b) He decides whether to fire with the vehicle moving or stopped. If he wants to fire while the vehicle is stopped, he says DRIVER STOP. If he wants to fire while the vehicle is moving, he says STABILIZED.

b) Avoid Writing Which Has Too Much Detail

Too much detail is usually the result of writing to more than one user or of writing to no particular user at all. Write to your primary user. Give him all the information that he needs to perform his job. Leave out everything else.

For Example:

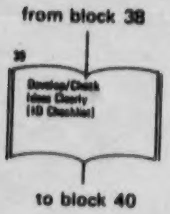
Too Much Detail

e. Several tracked vehicles are air transportable. Tracked vehicles are usually moving long distances by being transported rather than by proceeding under their own power. Instructions for loading vehicles on aircraft are provided in the technical manuals of the 10-500 series. Rail movement is probably used most. In continental United States, the Association of American Railroads has a standard loading plan that specifies the minimum lashing and blocking for each type vehicle. Since there are different maximum requirements among the different rail lines, the nearest agent will have been consulted for particulars when vehicles are to be loaded on railroad cars. Each unit usually becomes responsible for loading its own vehicles—it is necessary that you learn how your vehicle must be loaded. The technical manual for each type vehicle gives the minimum requirements of the Army for loading and lashing the vehicle. These requirements usually closely parallel those of the railroad lines. If you are familiar with the requirements in the technical manual it will be very easy to adapt to any additional requirements of the rail line.

Concise

e. *Moving long distances.* Tracked vehicles are not usually driven long distances. Instead, they are moved by rail or by air. Each unit loads its own vehicles, so you need to know how to load your vehicle and tie it down. You will find this information in the technical manual for your vehicle. Learn it. If you need to, you can add to this basic information the requirements of the railroad line or of the particular type of aircraft.

- For example of what ID Checklist looks like when you have checked what main points in the text are emphasized, see page L-8. Note Section 3, number 3.



- For further information and guidance, see below.

How do I develop ideas clearly?

- **When you write a series of paragraphs or passages, your writing will become confusing if you do not clearly develop and sequence your main points.**

a) Avoid Redundancy Between Paragraphs

When you think that you are making two different points, be sure that one isn't really a restatement of the other. If it is, you would do better to combine the two.

For Example:

Redundant

Antennas should be located on hills overlooking the surrounding terrain and jungle growth.

Antennas should be located as high as possible when the antenna site is located directly behind an intervening terrain mask. If feasible, tie the radio set to the top of a tree and operate it from that location by remote control. Slight tilting of an antenna away from the direction of the distant station also will help to breach an obstacle.

Antennas should not be located in narrow valleys or between ridges or stretches of high jungle growth.

Concise

Height of antenna. If you can, place antennas on hills or other high spots. The signal will then pass through less jungle growth and have a greater range. Never place your antenna in deep narrow valleys. When the growth or terrain is very close, place the antenna as high up as you can. Tie the radio set to the top of a tree if possible, and run it by remote control.

---

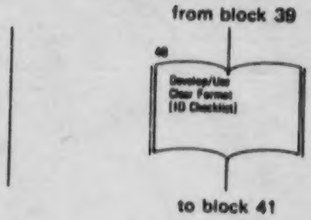
b) Avoid Scattered Information

Different information about the same main point should be together and not scattered throughout different paragraphs. Organize your information.

Example of Scattered Information

	The squad leader's responsibilities during the preparation of the position include:
a. refers to weapons.	(a) Coordinating with crews and gunners of all weapons located in the squad area.
b. refers to positions.	(b) Supervising the preparation of foxholes.
c. refers to range cards.	(c) Supervising the preparation of range cards to include assisting in the estimation of ranges to prominent terrain features.
d. refers to fire.	(d) Insuring provision for delivery of fires under conditions of limited visibility, to include improvised procedures for delivery of grazing fire by rifles and automatic rifles and prearranged grenade launcher fires.
e. refers to fire.	(e) Supervising the clearing of fields of fire.
f. refers to positions.	(f) Supervising the preparation of supplementary positions.
g. refers to positions.	(g) Inspecting positions to insure that camouflage and overhead covers are sufficient.
h. refers to weapons.	(h) Insuring that all weapons have their battlesight setting and are operative, and that adequate ammunition is available and distributed.
i. refers to range cards.	(i) Preparing a sketch in duplicate of the squad's sector of fire, showing prominent landmarks or terrain features and the ranges to them. He gives one sketch to the platoon leader and keeps one copy for himself.

- For example of what the ID Checklist looks like when you have checked that ideas are developed clearly, see page L-8. Note Section 3, number 4.



- For further information and guidance, see below.

How do I develop a clear format?

- **Avoid a Run-Together Format**

A *run-together format* is a solid mass of print. The reader cannot easily scan it. He cannot easily identify and lift out the separate points. The solution to a run-together format is to break the text up into visual "chunks" which group the information logically. Proper visual chunking lets the reader scan and identify the separate points easily.

For Example:

Run-Together Format

b. *Reoccupation of Position.* When the firing position is to be reoccupied, white tape is stretched between the two ground stakes to facilitate alignment of the tank's right or left track. With the shielded lights on the aiming stakes turned on, the gun is traversed to the angle of the aiming stakes and the tank is moved forward adjacent to the tape (fig 14-6). The gunner controls the final positioning of the tank by observing through his sight until the far light appears to be above and in line with the near light at which time the tank is halted. The gunner then, using the resetter knob on the azimuth indicator, indexes the pre-recorded deflection to the aiming stakes. The tank is now positioned so that the range card data can be used to engage targets.

Clear Format

b. *How to Move into a Marked Position*

(1) Crewmen stretch white tape between the two ground stakes to help position the tank's track.

(2) They turn on the lights on the two aiming stakes.

(3) The gunner moves the turret to the angle of the aiming stakes.

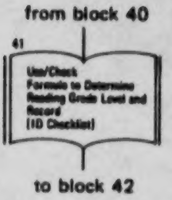
(4) The driver moves the tank up next to the tape.

(5) The driver stops the tank when the gunner sees the far light above the near light, and in line with it.

(6) The gunner uses the resetter knob on the azimuth indicator to index the pre-recorded deflection to the lighted aiming stakes.

(7) The tank is now in position to use the range card data.

- For example of what ID Checklist looks like when you have checked that format is clearly developed, see page L-8. Note Section 3, number 5.


from block 40
41
Use/Check Formula to Determine Reading Grade Level and Record (ID Checklist)
to block 42

- The Reading Grade Level Formula is used to keep the writing at a level appropriate for the target population.
- For further information and guidance, see below.

How do I use the formula for determining reading difficulty level?

GENERAL INSTRUCTIONS

1) Select the 150 word passage from connected discourse. Do not use this formula to check unconnected statements. It's best to start counting words at the beginning of a paragraph or section.

2) Counting the Words

   Words include numbers, letters, symbols, and groups of letters that are surrounded by white spaces. Hyphenated words and contractions are counted as one word. As an example, each of the following is counted as one word: "couldn't", "F.O.B.", "i.e.", "$32,008", "second-grade".

3) Counting the Syllables

   Count syllables the way the word is pronounced: such as "row" has one syllable, "mention" has two. With symbols and figures the syllables are known by the way they are normally read aloud, such as, one syllable for ("cents"), three for R.F.D. ("are-eff-dee"), and four for 1918 ("nineteen eighteen"). When in doubt about syllables, consult a dictionary. .

> **NOTE:** An important thing to remember when using the formula for a quality control check is to *not* write to the formula. Your writing should be directed to the student, not the formula. The formula serves as a guide for the reading difficulty level of material you *have* written and not the material you are getting ready to write.

SPECIFIC INSTRUCTIONS

STEP 1

Count the number of one syllable words in a **150**-word passage.

Number of one syllable words **- 79**

(Bracketed) Words Are One Syllable Words

Adequate protection [from] [the] elements [and] environmental conditons [must] [be] provided [by] [means] [of] proper storage facilities, preservation, packaging, packing, [or] [a] combination [of] any [or] [all] [of] [these] measures. [To] adquately protect [most] items [from] [the] damaging effects [of] water [or] water-vapors, adequate preservation [must] [be] provided. [This] [is] often [true] even [though] [the] item [is] [to] [be] [stored] [in] [a] warehouse provided [with] mechanical [means] [of] controlling [the] temperature [and] humidity. Several methods [by] [which] humidity [is] controlled [are] [in] [use] [by] [the] culinary services. [Use] [is] also [made] [of] mechanically ventilating [and] dehumidifying selected sections [of] existing warehouses. Appropriate consideration [will] [be] given [to] [the] preparation [and] [care] [of] items [stored] under specific [types] [of] storage [such] [as] controlled humidity, refrigerated, [and] heated. [The] amount [and] levels [of] preservation, packaging, [and] packing [will] [be] governed [by] [the] specific method [of] storage [plus] [the] anticipated [length] [of] storage.

STEP 2

Divide the number of one syllable words by **10**

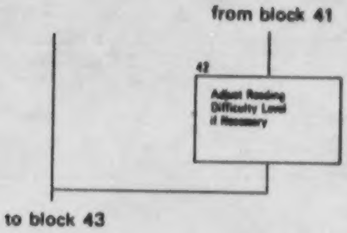
$$10\,\overline{)79} - 7.9$$

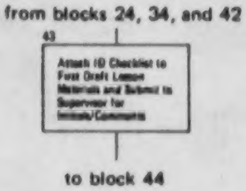
STEP 3

Subtract the result from **20** to obtain the reading grade level.

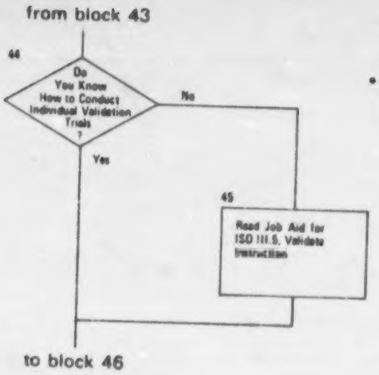
$$\begin{array}{r} 20.0 \\ -7.9 \\ \hline 12.1 \end{array} \longrightarrow \boxed{\begin{array}{c}\text{Reading Grade Level} \\ 12.1\end{array}}$$

- Record Reading Grade Level on ID Checklist. For example, see page L-8. Note Section 3, number 6.


from block 41
42
Adjust Reading
Difficulty Level
if Necessary
to block 43

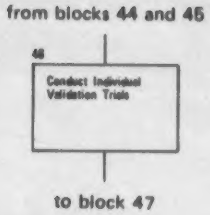

from blocks 24, 34, and 42
43
Attach ID Checklist to First Draft Lesson Materials and Submit to Supervisor for Initials/Comments
to block 44

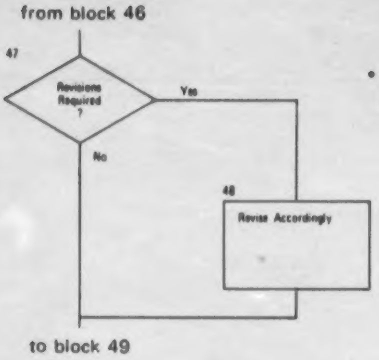
- Supervisor check is useful for obtaining another person's opinion of the lesson, and for double checking the items on the ID Checklist.


from block 43
44
Do You Know How to Conduct Individual Validation Trials ?
No
Yes
45
Read Job Aid for ISD III.5, Validate Instruction
to block 46

- Individual Validation Trials are also known as developmental testing.

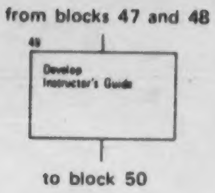
- This job aid does not cover individual validation trials. This topic is covered in another job aid.


from blocks 44 and 45
46
Conduct Individual Validation Trials
to block 47

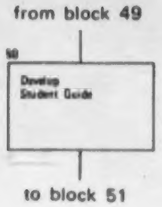

from block 46
47
Revisions Required ?
Yes
No
48
Revise Accordingly
to block 49

- The individual validation trials will reveal any weaknesses or deficiencies in the instructional materials.

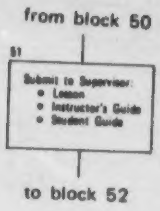
- Instructional materials are revised according to information collected in the validation trials.


from blocks 47 and 48
49
Develop Instructor's Guide
to block 50

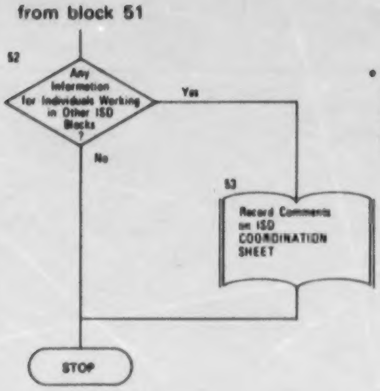
- This job aid does not cover the development of an instructor's guide.
- TRADOC Pam 350-30, Block III.4, Develop Instruction, covers this topic.


from block 49
50
Develop
Student Guide
to block 51

- This job aid does not cover the development of a student guide.
- TRADOC Pam 350-30, Block III.4, Develop Instruction, covers this topic.


from block 50
51
Submit to Supervisor:
Lesson
Instructor's Guide
Student Guide
to block 52

- Supervisor check is needed at this point, before materials go into final production.


from block 51
52
Any Information for Individuals Working in Other ISD Blocks ?
Yes
No
53
Record Comments on ISD COORDINATION SHEET
STOP

- During the instructional development process information may have been obtained that would be useful to persons who performed activities that fed into this one. Similarly, information may have been obtained that would be useful to persons who will be engaged in Instructional Systems Development steps that follow this one.

- Comments are recorded and submitted to appropriate persons.
- For further guidance, see below.

What is the importance of preparing comments for people working in other steps of the instructional systems development process? How do I record them?

- In order for the Instructional Systems Development process to work effectively it is imperative that there be forward and backward communication between the people involved in the process. At some time or other you have probably complained about the input that has been provided to you. Sometimes, you may have had to do work that should have been performed in previous steps.

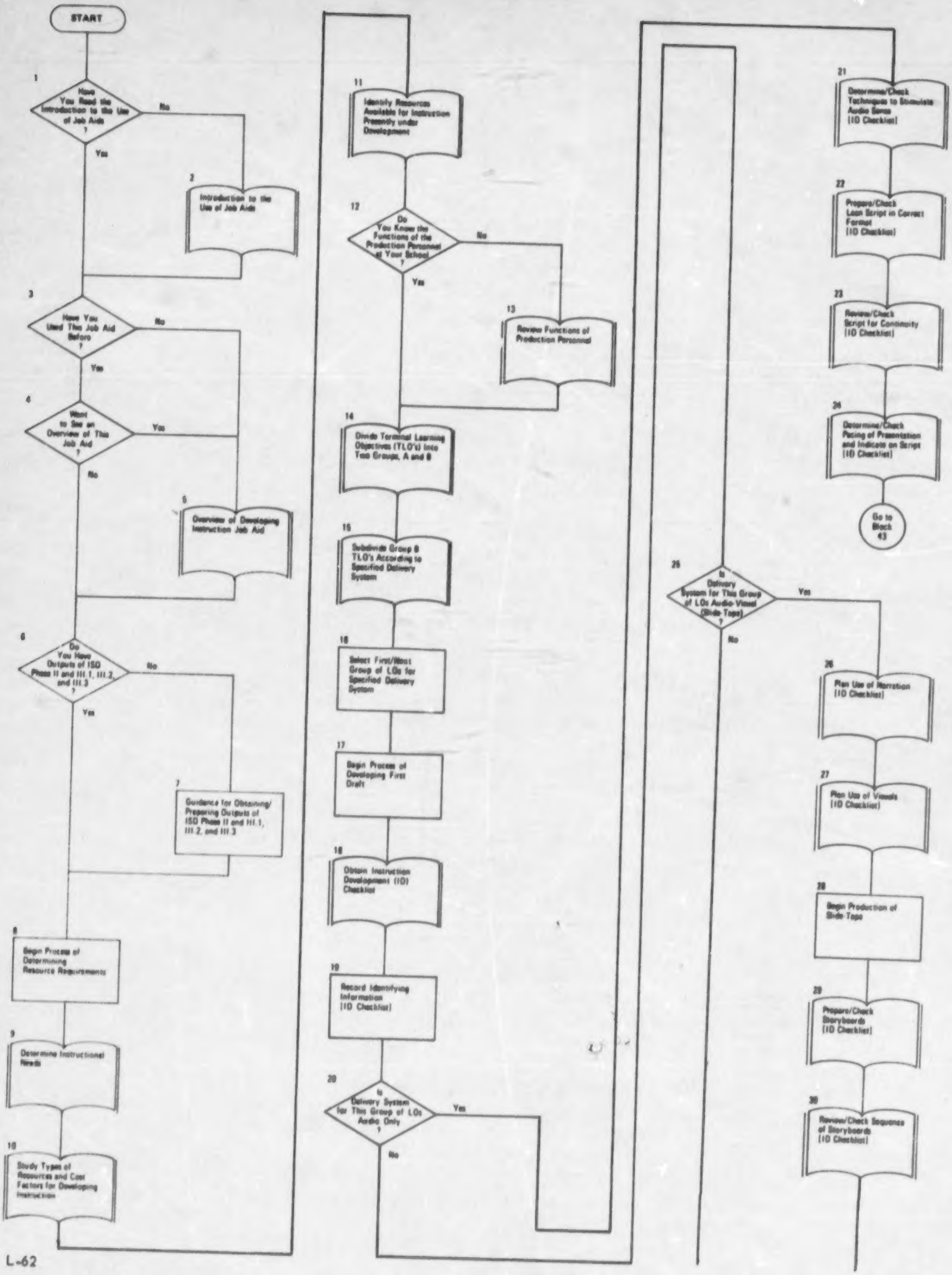
IT IS IMPORTANT THAT YOU FEED THIS INFORMATION BACK TO THE APPROPRIATE PEOPLE SO THAT REVISIONS CAN BE MADE TO EFFECT IMPROVEMENT IN THE END PRODUCT.

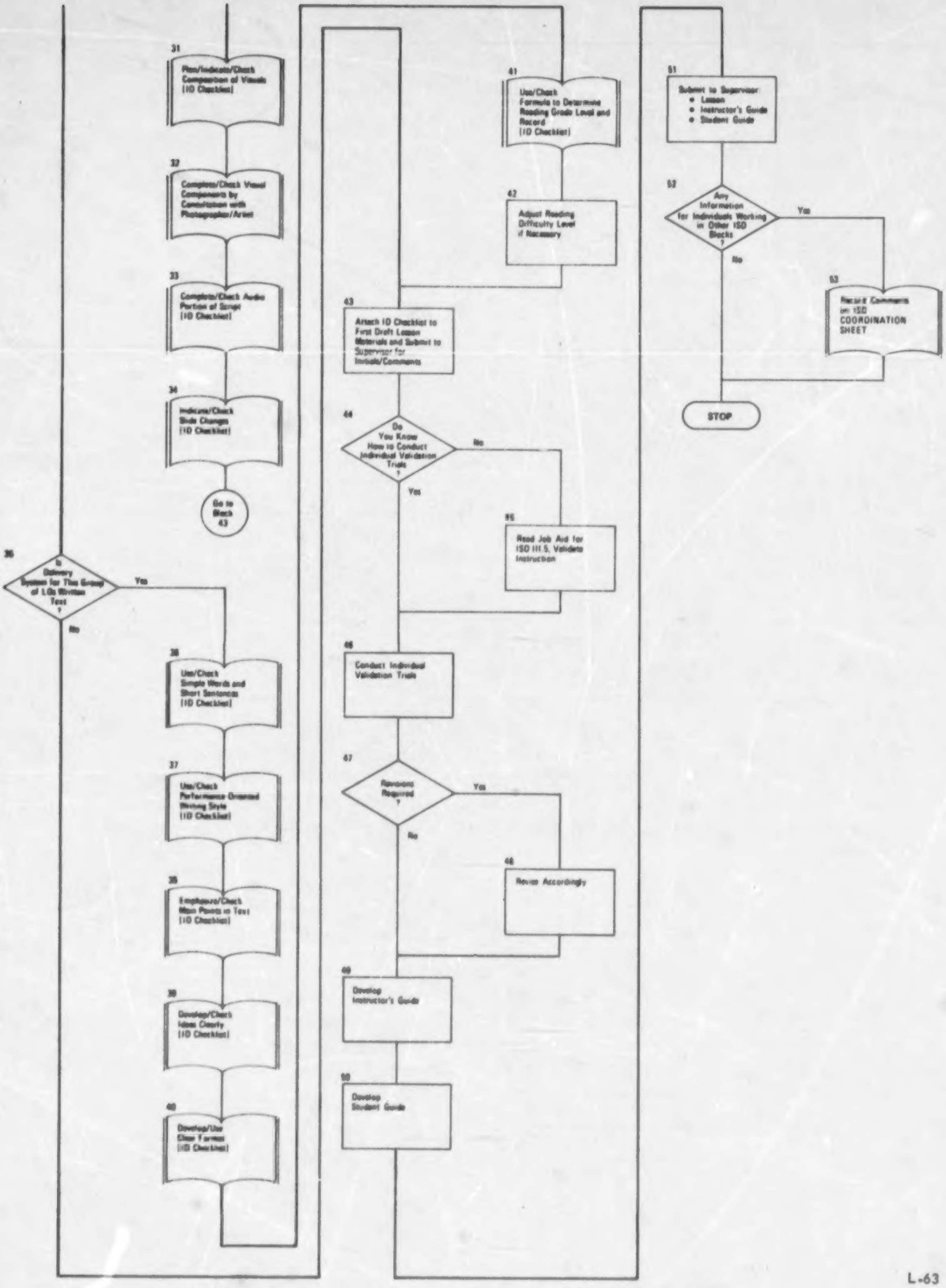
- In your research for this step of the Instructional Systems Development process you may have discovered additional information that you think may be useful to people who will be working in steps that follow this one. If so, it is equally important that you pass this information on to appropriate people.

REMEMBER, COMMUNICATION WITHIN THE INSTRUCTIONAL SYSTEMS DEVELOPMENT PROCESS IS CRITICAL FOR EFFECTIVE INSTRUCTIONAL DEVELOPMENT FOR SUCCESSFUL MISSION ACCOMPLISHMENT.

- A copy of the ISD COORDINATION SHEET can be found at the back of this manual. Make sufficient copies to enable you to send one to every individual you wish to communicate with—plus copies for your records.

- Complete the ISD COORDINATION SHEET in duplicate. Send one copy to the individual and attach one copy to the Instruction Settings Selection Package (ISR Sheets).


START
1
Have You Read the Introduction to the Use of Job Aids ?
No
Yes
2
Introduction to the Use of Job Aids
3
Have You Used This Job Aid Before ?
No
Yes
4
Want to See an Overview of This Job Aid ?
Yes
No
5
Overview of Developing Instruction Job Aid
6
Do You Have Outputs of ISD Phase II and III.1, III.2, and III.3 ?
No
Yes
7
Guidance for Obtaining/Preparing Outputs of ISD Phase II and III.1, III.2, and III.3
8
Begin Process of Determining Resource Requirements
9
Determine Instructional Needs
10
Study Types of Resources and Cost Factors for Developing Instruction
11
Identify Resources Available for Instruction Presently under Development
12
Do You Know the Functions of the Production Personnel at Your School ?
No
Yes
13
Review Functions of Production Personnel
14
Divide Terminal Learning Objectives (TLO's) Into Two Groups, A and B
15
Subdivide Group B TLO's According to Specified Delivery System
16
Select First/Next Group of LOs for Specified Delivery System
17
Begin Process of Developing First Draft
18
Obtain Instruction Development (ID) Checklist
19
Record Identifying Information (ID Checklist)
20
Is Delivery System for This Group of LOs Audio Only ?
Yes
No
21
Determine/Check Techniques to Stimulate Audio Sense (ID Checklist)
22
Prepare/Check Lean Script in Correct Format (ID Checklist)
23
Review/Check Script for Continuity (ID Checklist)
24
Determine/Check Pacing of Presentation and Indicate on Script (ID Checklist)
Go to Block 43
25
Is Delivery System for This Group of LOs Audio-Visual (Slide-Tape) ?
Yes
No
26
Plan Use of Narration (ID Checklist)
27
Plan Use of Visuals (ID Checklist)
28
Begin Production of Slide Tape
29
Prepare/Check Storyboards (ID Checklist)
30
Review/Check Sequence of Storyboards (ID Checklist)


31
Plan/Indicate/Check Composition of Visuals [ID Checklist]
32
Complete/Check Visual Components by Consultation with Photographer/Artist
33
Complete/Check Audio Portion of Script [ID Checklist]
34
Indicate/Check Slide Changes [ID Checklist]
Go to Block 43
35
Is Delivery System for This Group of LOs Written Text ?
Yes
No
36
Use/Check Simple Words and Short Sentences [ID Checklist]
37
Use/Check Performance Oriented Writing Style [ID Checklist]
38
Emphasize/Check Main Points in Text [ID Checklist]
39
Develop/Check Ideas Clearly [ID Checklist]
40
Develop/Use Clear Format [ID Checklist]
41
Use/Check Formula to Determine Reading Grade Level and Record [ID Checklist]
42
Adjust Reading Difficulty Level if Necessary
43
Attach ID Checklist to First Draft Lesson Materials and Submit to Supervisor for Initials/Comments
44
Do You Know How to Conduct Individual Validation Trials ?
No
Yes
45
Read Job Aid for ISD III.5, Validate Instruction
46
Conduct Individual Validation Trials
47
Revisions Required ?
Yes
No
48
Revise Accordingly
49
Develop Instructor's Guide
50
Develop Student Guide
51
Submit to Supervisor:
• Lesson
• Instructor's Guide
• Student Guide
52
Any Information for Individuals Working in Other ISD Blocks ?
Yes
No
53
Record Comments on ISD COORDINATION SHEET
STOP

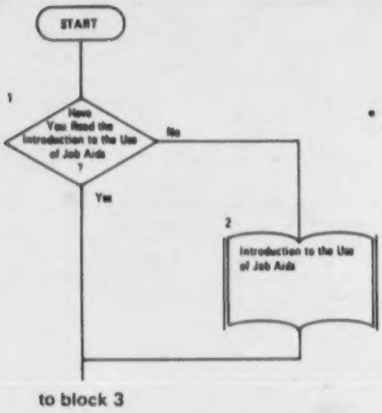
JOB AID FOR VALIDATING INSTRUCTION

ISD III.5

Manual

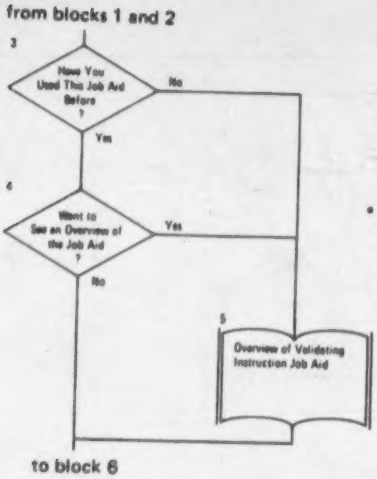
This is the 13th in a series of ISD Job Aids for use in instructional design and development. This volume is to be used as a supplement to the primary document, "Job Aids: Descriptive Authoring Flowcharts ISD III.5 Validating Instruction." The flowchart document will direct you to specific guidance, examples, and references provided in this volume. If you do not have the primary flowchart document, request it from your supervisor.

The wording in this manual should not be construed to discriminate between the sexes. In order to avoid a repetitious use of the terminology, "he/she," the terms, "he," "him," and "his," as well as "men," are intended to include both the masculine and feminine gender. Any exceptions to this usage will be so noted.


START
1
Have You Read the Introduction to the Use of Job Aids ?
No
Yes
2
Introduction to the Use of Job Aids
to block 3

- This introduction provides the user with instruction on the basic structure of the Job Aids and guidance for their use.

- Refer to Introduction.


from blocks 1 and 2
3
Have You Used This Job Aid Before ?
No
Yes
4
Want to See an Overview of the Job Aid ?
Yes
No
5
Overview of Validating Instruction Job Aid
to block 6

- Overview includes:
  - Goal
  - Objectives
  - Products
  - Major steps in process
  - Worksheets used
  - Descriptive flowcharts

- For detailed overview, see below.

What is the Validate Instruction Job Aid all about?

- **GOAL**

Validation is the process by which instructional material (course, module, lesson, etc.) is tested and revised until you are reasonably sure it teaches what you want it to teach. The purpose of this job aid is to provide the procedures for conducting validation trials.

There are two types of validation trials described in this job aid. They are:

1. Individual Validation Trials—One trainee at a time evaluates the effectiveness of the instruction to identify major "bugs" in the instructional material. After one or more individual evaluation trials, needed revisions in the instruction are made. Individual Validation Trials continue until all major "bugs" have been identified and corrected.
2. Group Validation Trials—The instructional material is administered to a group of representative trainees to identify any problems (bugs) not identified in the Individual Validation Trials. Again, necessary revisions are made in the instruction.

- **OBJECTIVES**

1. Given the appropriate directions, validate a proposed unit of instruction.
2. Given the appropriate worksheets and instruction on how to fill them out, document:
   a. the number of subjects used
   b. the type of validation used
   c. the type of revisions needed (if any), for all validation trials.

- **PRODUCT**

This job aid will result in a completed Instruction Validation Recording Sheet for both Individual Validation Trials (IVR Sheet - Indiv.) and Group Validation Trials (IVR Sheet - Grp.)

- **OVERVIEW OF MAJOR STEPS IN VALIDATING INSTRUCTION**

Step 1. Select trainee for Individual Evaluation Trial

Step 2. Identify and record major "bugs" in instructional material

Step 3. Determine whether another trainee should evaluate the instructional material before any revisions are made

Step 4. Repeat Steps 1 thru 3 until all major "bugs" have been identified

Step 5. Record needed revisions

Step 6. Make revisions in instructional material

Step 7. Determine if additional Individual Validation Trial(s) are needed. If so, repeat Steps 1 thru 6 as necessary.

Step 8. Repeat entire process for Group Validation Trials

- **WORKSHEETS USED**

The Tables on page M-57 and M-58 show a completed Instruction Validation Recording Sheet for both individual and group evaluation.

Table M-6

ISD III.5 Validate Instruction

INSTRUCTION VALIDATION RECORDING SHEET – INDIVIDUAL

(IVR Sheet – Indiv)

SECTION I: COURSE DESCRIPTION

Course MOS code 53P
Skill level 2
Individual Validation
Instruction under development Basic First Aid
Instruction being validated Module 1, CPR
Trial No 1

SECTION II: EVALUATIONS BY TRAINEE

A ISD Personnel Conducting Evaluation
Name SFC Mary Lewis
Organization USAES, CD

B Method(s) Used for Evaluation
✓ Tests
____ Questionnaires
____ Attitude Scales
✓ Interviews
✓ Other (specify) Observation

C Trainee and Instructional Personnel Used for Evaluation
Trainee E-2 Joseph Dennig
Trainee Organization A Co, 82nd Eng Bn
Instructor SFC Ollie Short
Organization USAES
Date Given Instruction 10/10/78

D Results of Evaluation

Could not answer review questions on pages 3 and 11
Not familiar with terms: simulated, mannequin, sternum

A ISD Personnel Conducting Evaluation
Name SFC Mary Lewis
Organization USAES, CD

B Method(s) Used for Evaluation
✓ Tests
____ Questionnaires
____ Attitude Scales
✓ Interviews
✓ Other (specify) Observation

C Trainee and Instructional Personnel Used for Evaluation
Trainee E-2 Philip Morris
Trainee Organization A Co, 82nd Eng Bn
Instructor SFC Ollie Short
Organization USAES
Date Given Instruction 10/10/78

D Results of Evaluation

Could not answer review questions on page 11
Not familiar with terms: mannequin, sternum

A ISD Personnel Conducting Evaluation
Name SFC Mary Lewis
Organization USAES, CD

B Method(s) Used for Evaluation
✓ Tests
____ Questionnaires
____ Attitude Scales
✓ Interviews
✓ Other (specify) Observation

C Trainee and Instructional Personnel Used for Evaluation
Trainee E-2 Larry Brown
Trainee Organization B Co, 82nd Eng Bn
Instructor SFC Ollie Short
Organization USAES
Date Given Instruction 10/11/78

D Results of Evaluation

Could not answer review questions on page 11
Familiar with all terms.

A ISD Personnel Conducting Evaluation
Name ____
Organization ____

B Method(s) Used for Evaluation
____ Tests
____ Questionnaires
____ Attitude Scales
____ Interviews
____ Other (specify) ____

C Trainee and Instructional Personnel Used for Evaluation
Trainee ____
Trainee Organization ____
Instructor ____
Organization ____
Date Given Instruction ____

D Results of Evaluation

SECTION III: SUMMARY OF REVISIONS REQUIRED

Material on pages 1 and 2, 9 and 10 needs more explanation
Define: simulated, mannequin, sternum

Date Revisions Completed ____

Table M-7

ISD III.5 Validate Instruction

INSTRUCTION VALIDATION RECORDING SHEET – GROUP

(IVR Sheet – Grp)

SECTION I: COURSE DESCRIPTION

Course MOS code 53P
Skill level 2
Group Validation
Instruction under development Basic First Aid
Instruction being validated Module 1, CPR
Trial No 1

SECTION II: EVALUATIONS BY GROUPS OF TRAINEES

A. ISD Personnel Conducting Evaluation
Name SFC Mary Lewis
Organization USAES, CD

B. Method(s) Used for Evaluation
☑ Tests
☑ Questionnaires
☐ Attitude Scales
☐ Interviews
☐ Other (Specify) ____

C. Trainees and Instructional Personnel Used for Evaluation
Number 20
Trainee Organization A Co, 82nd Eng Bn
Instructor SFC Ollie Short
Organization USAES
Date Instruction Given 10/20/78

D. Results of Evaluation
Questions 3, 5, 6, 10 and 15 have give-away answers
80% lacked entry behavior

A. ISD Personnel Conducting Evaluation
Name SFC Mary Lewis
Organization USAES, CD

B. Method(s) Used for Evaluation
☑ Tests
☑ Questionnaires
☐ Attitude Scales
☐ Interviews
☐ Other (Specify) ____

C. Trainees and Instructional Personnel Used for Evaluation
Number 20
Trainee Organization B Co, 82nd Eng Bn
Instructor SFC Ollie Short
Organization USAES
Date Instruction Given 10/21/78

D. Results of Evaluation
Questions 3, 5, 6 and 15 have give-away answers. Everyone already knows Question 10.
60% lacked entry behavior

A. ISD Personnel Conducting Evaluation
Name ____
Organization ____

B. Method(s) Used for Evaluation
☐ Tests
☐ Questionnaires
☐ Attitude Scales
☐ Interviews
☐ Other (Specify) ____

C. Trainees and Instructional Personnel Used for Evaluation
Number ____
Trainee Organization ____
Instructor ____
Organization ____
Date Instruction Given ____

D. Results of Evaluation

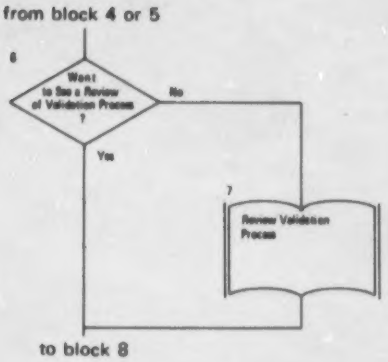
SECTION III: SUMMARY OF REVISIONS REQUIRED

Rewrite questions 3, 5, 6 and 15.
Drop question 10 and the matching learning material.
Reanalyze entry behaviors; add the necessary prerequisites to the lesson.

Date Revisions Completed ____

- **DESCRIPTIVE FLOWCHART**

  — The flowcharts on pages M-57 and M-58 show the steps in the use of the Job Aid for Validating Instruction. The flowchart will be useful to you in getting a clear picture of the overall process used in this job aid. A more completely described flowchart is provided in ISD III.5 Job Aids: Descriptive Authoring Flowcharts, (Validating Instruction).


from block 4 or 5
6
Want to See a Review of Validation Process ?
No
Yes
7
Review Validation Process
to block 8

- Review includes:
  - Definition
  - Necessity for validation
  - Proper time to validate
  - Importance of feedback
  - How validation helps improve instruction
- For further information, see below.

What is the process of validating instruction all about?

- **DEFINITION**

  — Validation is the final step in the systematic design and development of an instructional program.

  — It is a process that increases the probability of successful implementation of a program by IMPROVING, REVISING, MODIFYING, and CLARIFYING its design and structure before the program is used in the classroom.

- **WHY VALIDATE:**

  — After all your hard work you want to be sure that your program works. You can increase the chances of having a successful program of instruction by trying it our prior to implementation (ISD, Phase V). Thus, you have the opportunity to revise your program until it achieves what you want it to achieve.

- **WHEN TO VALIDATE:**

  — You can try out instructional material at any of the following points:

  1) After developing the first sequence
  2) After developing an entire module
  3) After developing the overall design of the material
  4) After developing the entire program

  — It is wise to start the validation process early in instructional development. However, validation can occur at any of the points listed above.

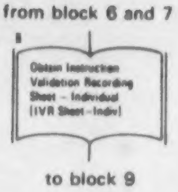
- **WHAT IS IMPORTANT**

  — The important point about validation is that FEEDBACK is obtained from a closely observed trainee before an instructional program is taken into the classroom.

- **HOW DOES VALIDATION HELP:**

  — The validation process can help you eliminate problems that may occur in three areas:

  1) CLARITY of your program is maximized by making sure that:
     a) the language and reading level is geared to the level of the trainee for whom the program is intended
     b) the instructions are precise
     c) the material is logical and sequential
     d) the sentence structure is correct and meaningful.
  2) INTEREST LEVEL of the student is determined
     a) does the material arouse curiosity—gain attention?
     b) does it cause boredom, or apathy, or disinterest?
  3) PRESENTATIONAL FORM
     a) is it appropriate and well paced?
        — need to improve visuals, diagrams, charts?
        — does instructional sequence cover too much, or not enough, ground for this level?
        — are more or less feedback/reinforcers needed?
        — are tests too easy/difficult?


from block 6 and 7
8
Obtain Instruction Validation Recording Sheet – Individual (IVR Sheet–Indiv)
to block 9

- Instruction Validation Recording Sheet – Individual (IVR Sheet – Indiv.) is used to document the Individual Trial(s) Validation process.
- For guidance in obtaining IVR Sheet–Indiv, see below.

Where do I get Instruction Validation Recording Sheets?

- There are two Instruction Validation Recording Sheets used with this job aid:
  - Instruction Validation Recording Sheet - Individual (IVR Sheet - Indiv.)
  - Instruction Validation Recording Sheet - Group (IVR Sheet - Grp.)
- The IVR Sheet - Grp. is on the reverse side of the IVR Sheet - Indiv.
- The Instruction Validation Recording Sheets are available for duplication in the pocket at the end of this manual.
- To see an example of completed IVR Sheets, refer to page M-6 and M-7.

from block 8
9
Complete Section I of IVR Sheet – Indiv.
to block 10

- Information included in Section I is as follows:
  - Course MOS Code
  - Skill level
  - Instruction under development
  - Instruction being validated
  - Individual Validation Trial Number
- For guidance in completing Section I of IVR Sheet – Indiv., see below.

How do I complete Section I of the Instruction Validation Recording Sheet - Individual?

- **COURSE MOS CODE AND SKILL LEVEL** designation is the MOS and skill level for which the instructional material is being developed.

- **INSTRUCTION UNDER DEVELOPMENT** may be an entire course, module, lesson, etc. that you are working on. It can contain more than one piece of instructional material.

- **INSTRUCTION BEING VALIDATED** may be only one piece of instructional material (e.g., a slide-tape) from the entire course, module, etc. that is being developed. Sometimes, however, Instruction Under Development and Instruction Being Validated are the same thing.

- **INDIVIDUAL VALIDATION TRIAL NUMBER** refers to the specific product you are validating at this time. Within an individual trial, more than one trainee should be used to evaluate the material before revisions are made. Each trainee would be tested on the material individually in order to gain information on what kinds of revisions are necessary. This would constitute TRIAL NUMBER 1. After revisions are made, new trainees may be tested on the material (again, they would be tested individually) and new revisions would be indicated. This would constitute TRIAL NUMBER 2. The process would be continued until you decided that no more useful information could be obtained from further individual trials.

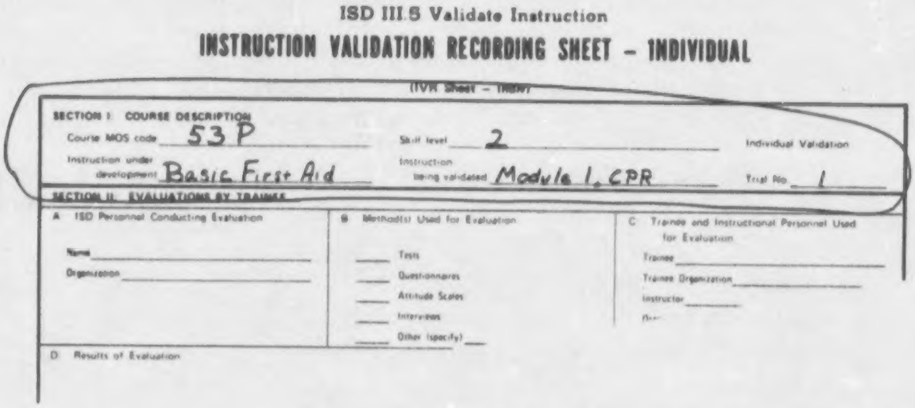
  — Another way of looking at this is:

$$\left.\begin{array}{c}\text{Trainee 1}\\\text{Trainee 2}\\\text{Trainee 3}\\\text{etc.}\end{array}\right\}\ \text{Trial No. 1}\qquad\left.\begin{array}{c}\text{Trainee 1}\\\text{Trainee 2}\\\text{Trainee 3}\\\text{Trainee 4}\\\text{etc.}\end{array}\right\}\ \text{Trial No. 2}$$

$$\left.\begin{array}{c}\text{Trainee 1}\\\text{Trainee 2}\\\text{etc.}\end{array}\right\}\ \text{Trial No. 3}\qquad\text{ETC.}$$

What does the IVR Sheet - Individual look like when Section I has been completed?

Example:



ISD III.5 Validate Instruction

INSTRUCTION VALIDATION RECORDING SHEET – INDIVIDUAL

(IVR Sheet – INDIV)

SECTION I: COURSE DESCRIPTION

Course MOS code 53 P

Skill level 2

Individual Validation

Instruction under development Basic First Aid

Instruction being validated Module 1, CPR

Trial No. 1

SECTION II: EVALUATIONS BY TRAINEE

A ISD Personnel Conducting Evaluation

Name ______

Organization ______

B Method(s) Used for Evaluation

____ Tests

____ Questionnaires

____ Attitude Scales

____ Interviews

____ Other (specify) ____

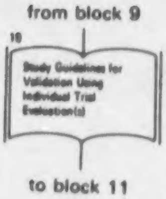
C Trainee and Instructional Personnel Used for Evaluation

Trainee ______

Trainee Organization ______

Instructor ______

D Results of Evaluation


from block 9
10
Study Guidelines for Validation Using Individual Trial Evaluation(s)
to block 11

- Guidelines explain the process of, and procedures used in, a validation trial using a single trainee as a subject.
- For further information, see below

What guidelines should be followed in conducting validation using individual trial evaluation?

• CONDUCTING INDIVIDUAL EVALUATIONS:

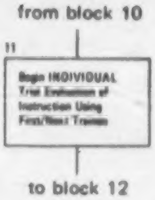
1) During the individual evaluation of instructional material, a single trainee is closely observed as he uses the material. Wherever the trainee has difficulty or seems uncertain, this should be carefully noted, even if it concerns only one teaching point. If the trainee has trouble understanding or applying one rule or principle, more than likely he will have difficulty in accomplishing the behavior to which that rule or principle applies.

2) During the process of validation, it is very important that both the instructional materials developer and the trainee understand their roles in the process. You should explain to the trainee that he is not being evaluated, but the system is. Trainees need to be urged to participate actively and respond as required. It is through the feedback provided by the trainee that you can determine the adequacy of the instructional materials. You must remember that the failure of the trainee to perform competently at this stage is a reflection on the instruction and not the trainee.

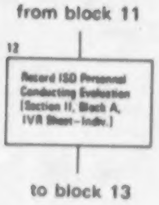
3) After the trainee has completed the unit of instruction and the criterion examination, he should be encouraged to discuss any areas in which he experienced difficulty. Several individual evaluations should be conducted before any significant changes are made.

• USE OF INDIVIDUAL EVALUATION RESULTS:

When certain error patterns occur during successive evaluations, it is an indication that revision is necessary. For example, if several trainees fail to meet the standard of performance established for a particular criterion objective, the instruction leading to that objective needs to be analyzed and revised. If the instructional unit has to be revised significantly, it would be best to conduct one or more individual evaluations to check the results of the modifications. However, if the instructional sequence is basically sound and requires only minor changes, a group validation can be started. (Group Validation is discussed later in the manual).


from block 10
11
Begin INDIVIDUAL Trial Evaluation of Instruction Using First/Next Trainee
to block 12

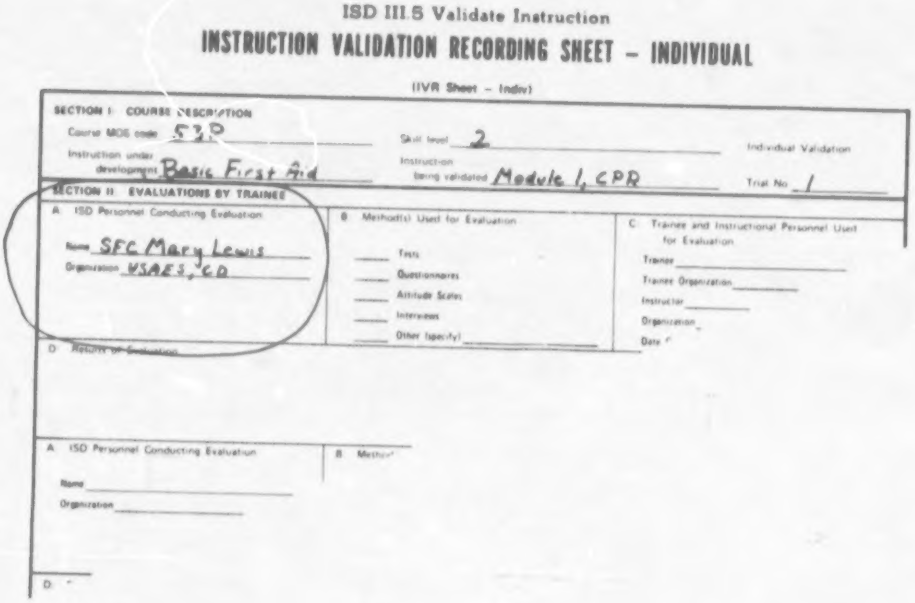
- This block begins the Individual Validation Trial(s) process.


from block 11
12
Record ISD Personnel Conducting Evaluation (Section II, Block A, IVR Sheet–Indiv.)
to block 13

- The name and organization of the ISD individual(s) conducting the evaluation is recorded.
- For example, see below.

What does IVR Sheet - Individual look like when personnel conducting evaluation is recorded in Section II, Block A?

Example:



ISD III.5 Validate Instruction

INSTRUCTION VALIDATION RECORDING SHEET – INDIVIDUAL

(IVR Sheet – Indiv)

SECTION I COURSE DESCRIPTION

Course MOS code 53P

Skill level 2

Individual Validation

Instruction under development Basic First Aid

Instruction being validated Module 1, CPR

Trial No 1

SECTION II EVALUATIONS BY TRAINEE

A ISD Personnel Conducting Evaluation

Name SFC Mary Lewis

Organization USAES, CD

B Method(s) Used for Evaluation

____ Tests

____ Questionnaires

____ Attitude Scales

____ Interviews

____ Other (specify) ____________

C Trainee and Instructional Personnel Used for Evaluation

Trainee ____________

Trainee Organization ____________

Instructor ____________

Organization

Date

D Results of Evaluation

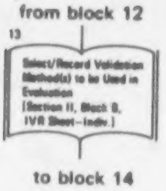
A ISD Personnel Conducting Evaluation

Name ____________

Organization ____________

B Metho

D


from block 12
13
Select/Record Validation Method(s) to be Used in Evaluation
(Section II, Block 8, IVR Sheet—Indiv.)
to block 14

- Methods used in validation are:
  - Tests
  - Questionnaires
  - Attitude Scales
  - Interviews
  - Observation
  - Other methods specific to the training situation
- For further explanation, see below.

What are some methods used in the validation process?

- There are a number of methods that may be used to obtain various types of information during the validation process. The decision to revise instructional units is based on these responses.

- **VALIDATION METHODS:**

  1) Tests: To obtain scores from the trainees who are being used as subjects in the validation process.

     — There are four general types of tests:

       1) Entry tests
       2) Pretests
       3) Posttests
       4) Within-course tests

     — Patterns of incorrect test responses indicate the possibility that instructional material is not clear in particular areas. Since each test item is referenced to a particular element of a task, it is relatively easy to identify the problem area.

     — Pre/posttest scores allow you to compute the learning gain achieved by the material.

  2) Questionnaires: To collect data on the effectiveness of the format and content of the material.

     — Questionnaires provide direct feedback from the trainee on those areas which he feels need improvement.

  3) Attitude Scales: To collect data on the attitudes of the trainees toward the instructional unit.

     — Attitude scales indicate whether or not the trainee was motivated by the instructional unit.

---

4) Interviews: Can be used instead of No. 2 (Questionnaires) and No. 3 (Attitude Scales) above.

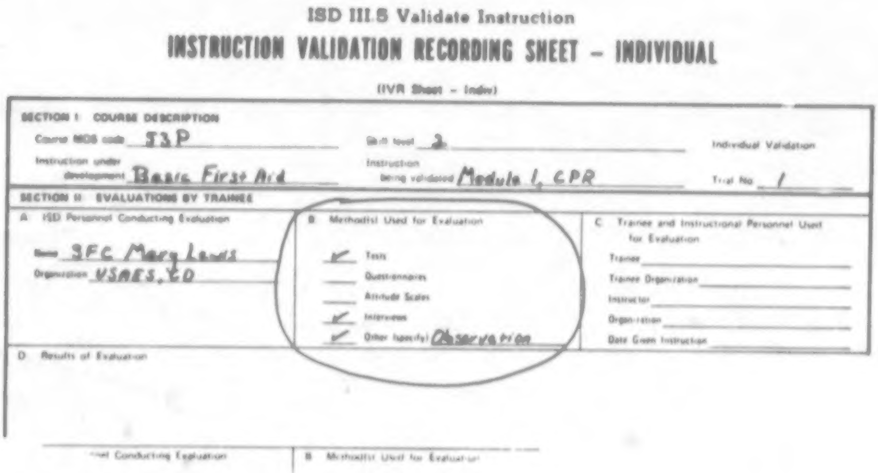
   — Interviews provide an open-ended format which allow the trainees to express themselves more fully. However, interviews are usually more time consuming than the other methods.

5) Observation: To collect data on those areas of the instructional unit that seem to be confusing to the trainee.

   — Your observations are the most important element in this process because your impressions may form the basis of instructional revision.

What does IVR Sheet - Individual look like when method used for evaluation is recorded in Section II, Block B?

Example:



ISD III.5 Validate Instruction

INSTRUCTION VALIDATION RECORDING SHEET – INDIVIDUAL

(IVR Sheet – Indiv)

SECTION I COURSE DESCRIPTION

Course MOS code 53P
Skill level 2
Individual Validation
Instruction under development Basic First Aid
Instruction being validated Module 1, CPR
Trial No 1

SECTION II EVALUATIONS BY TRAINEE

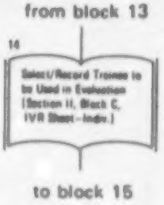
A ISD Personnel Conducting Evaluation
Name SFC Mary Lewis
Organization USAES, CD

B Method(s) Used for Evaluation
✓ Tests
___ Questionnaires
___ Attitude Scales
✓ Interviews
✓ Other (specify) Observation

C Trainee and Instructional Personnel Used for Evaluation
Trainee ___
Trainee Organization ___
Instructor ___
Organization ___
Date Given Instruction ___

D Results of Evaluation

nel Conducting Evaluation
B Method(s) Used for Evaluation


from block 13
14
Select/Record Trainee to be Used in Evaluation (Section II, Block C, IVR Sheet–Indiv.)
to block 15

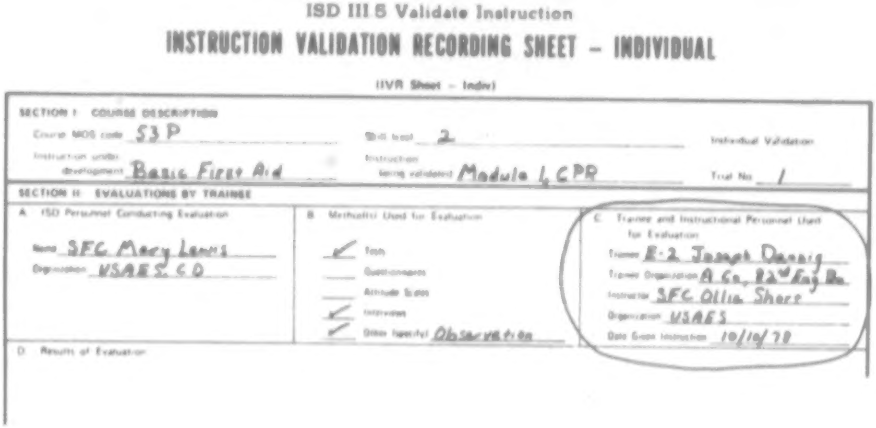
- Trainees who are representative of the target population are selected as subjects.
- For further guidance, see below.

How do I choose a sample of trainees on which to conduct an individual trial validation?

- **INDIVIDUAL TRAINEE SAMPLING:**
  - The individual trainee should be representative of the intended target population. The trainees selected for the purpose of validation should fall within the range of aptitudes, prior knowledges, skills, and background of the typical target population.
  - Those trainees who are selected should possess higher aptitudes within the target population range. If they have trouble learning the material, then obviously the material would be too difficult for the less capable trainee. Also, the higher aptitude trainee will be better able to point out weak areas in the instructional unit.

What does IVR Sheet - Individual look like when Section II, Block C "Trainee and Instructional Personnel Used" is filled in?

Example:



ISD III 5 Validate Instruction

INSTRUCTION VALIDATION RECORDING SHEET – INDIVIDUAL

(IVR Sheet – Indiv)

SECTION I COURSE DESCRIPTION

Course MOS code 53 P

Skill level 2

Individual Validation

Instruction under development Basic First Aid

Instruction being validated Module 4 CPR

Trial No. 1

SECTION II EVALUATIONS BY TRAINEE

A. ISD Personnel Conducting Evaluation

Name SFC Mary Lewis

Organization USAES, CD

B. Method(s) Used for Evaluation

✓ Tests

☐ Questionnaires

☐ Attitude Scales

✓ Interviews

✓ Other (specify) Observation

C. Trainee and Instructional Personnel Used for Evaluation

Trainee E-2 Joseph Dennig

Trainee Organization A Co, 82nd Eng Bn

Instructor SFC Ollie Short

Organization USAES

Date Given Instruction 10/10/78

D. Results of Evaluation

from block 14
15
Prepare Validation Recording Form(s) (VR Forms)
to block 16

- Validation Recording Forms include:
  - Questionnaires
  - Attitude Scales
  - Interview Forms
  - Observation Forms
- For guidance in preparing Validation Recording Forms, see below.

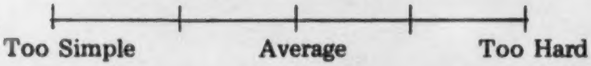
How do I prepare Validation Recording Forms (VR Forms)?

- The purpose of the test trials is to collect information about the trainees, the materials, and the procedures. You must have a system for collecting and recording the data so that decisions can be made based on the data. There is no point in collecting particular data unless you intend to use it.
  - Usually you will need data such as:
    - a) background information on the trainees
    - b) results of pretests, entry level tests, attitude measures, and within-course test items
    - c) validator's comments to trainees
    - d) trainees' questions and remarks
    - e) length of time required on different parts of the instructional program
    - f) results of posttest and interviews
- Guidelines for constructing validation recording forms:
  - Attitude scales:
    - A) Attitude scales are used to collect information about the trainee's feelings toward the unit of instruction. The following are examples of the type of question that you may want to include:
      - 1) Did the activity help the trainee achieve the criterion on the learning objective?
      - 2) Did the trainee learn skills that he expected to use on the job?
      - 3) What did the trainee think about the activity's: a) level of difficulty, b) vocabulary level, c) pace, d) etc.?
      - 4) Did the trainee think that the activity was interesting?
      - 5) Did the trainee feel pressured?
      - 6) Would the trainee prefer a different type of instruction?
      - 7) Did the trainee think that the material was clearly presented?
      - 8) ETC.

B) In general, attitude scales should be constructed so that:

1) the items are worded in such a manner that the trainee has a range of choices.
2) the choices provide for positive, negative and neutral positions along the scales. For example:

This activity was:



3) the items are counter-balanced (the reversing of positive and negative poles on each successive item) to avoid response sets (the tendency to arbitrarily check off the same response when answering a list of questions).
4) both the trainee and the scorer are able to tell which responses are positive and which are negative.

-- Trainee background information:

Examples of background information that you may want to gather about the trainee include the following:

1) Trainee's name
2) Trainee's grade
3) Highest level of education
4) Time in service
5) Trainee's MOS
6) Time in MOS
7) Title of present job
8) ETC.

— Data gathered through observation:

You are the most important part of the observation process. Your interpretations of what you see when the trainee is engaged in the learning activities, become the data on which your decisions will be based. The following are some suggestions of what to look for when observing a trainee:

1) How long does it take the trainee to complete the task?
2) Does one particular area of the instructional unit seem to present a stumbling block to the trainee's progress?
3) Does the trainee's attention seem to wander, indicating areas that may be boring or too difficult?
4) What problems did the trainee encounter using the material. For instance, were instructions easily understood?
5) ETC.

— Results of written tests:

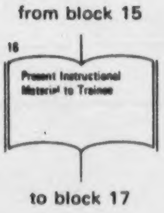
Besides looking at how many items were passed and how many were failed, it is important to look at tests results to see whether incorrect responses seem to group around one particular area of the instructional unit. That is, did the trainees consistently answer incorrectly the material dealing with one or two particular points. This information would indicate an area of the instructional unit that you may want to consider revising.

— Data from interviews:

1) The same type of information as was obtained through attitude scales may be gained through face-to-face interviews with the trainee. Both techniques have their advantages and disadvantages.
2) The advantage of an interview is that the trainee can answer your questions in an open-ended style. He can give you as much information as he wishes without the constraints of space provided on a page.
3) This open-ended style of answering questions may then lead you to think of other questions you want to ask.

**** In general, the following guidelines should be followed when con-constructing validating recording forms:

1) Don't use terms or ask questions about topics that your respondent will not know about.
2) Make sure that any answer the respondent makes will have a clear meaning to you.
3) Don't ask people to make undesirable choices.
4) Don't lead your respondents by wording the item so they will know what answers you want.
5) Make the item and the choices short, and use simple words.
6) Make certain the item clearly specifies what you want the respondent to do.
7) Don't ask respondents to do several things in one item.
8) Don't ask for several kinds of information in one item.
9) Don't use tricky wording, especially double negatives.
10) Don't ask for fine distinctions, unless you know they will be meaningful to your respondents.
11) Don't word your question in such a way that the balance of responses will unavoidably be in one direction (loading).
12) Be sure your answers are worded so that someone who disagrees with you can find an answer presenting his side of the issue.



- Methods are discussed for presentation of instructional material. They include:
  - Who should present the material
  - Location (site) for presentation
  - Amount of material to be presented
- For further information, see below.

What are the various ways that instructional materials may be presented?

- **WHO PRESENTS THE MATERIAL:**

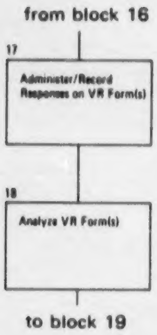
  — Material may be presented by validation personnel or by course instructors. If presented by course instructors, their observations of the trainee's performance can become an important part of the validation process. If you are presenting the material, you should plan to record your observations. If course instructors are presenting the material you should record their observations.

- **WHERE MATERIAL IS PRESENTED:**

  — On an individual evaluation, material may be presented any place that is both convenient and has the proper equipment. This may be your office or the actual site where course instruction will take place (e.g., classroom).

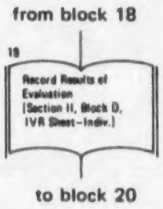
- **HOW MUCH MATERIAL SHOULD BE PRESENTED:**

  — On the first individual trial, present all of the material to be validated. On subsequent trials, once revisions have been made, you may want to present only those parts of the instructional material that has been revised.


from block 16
17
Administer/Record Responses on VR Form(s)
18
Analyze VR Form(s)
to block 19

- Forms may either be filled out by the trainee (e.g., an attitude scale) or by the person(s) conducting the validation (e.g., responses to an interview).

- Forms are analyzed for patterns of responses or other information indicative of whether or not revision of material is necessary.


from block 18
19
Record Results of Evaluation (Section II, Block D, IVR Sheet–Indiv.)
to block 20

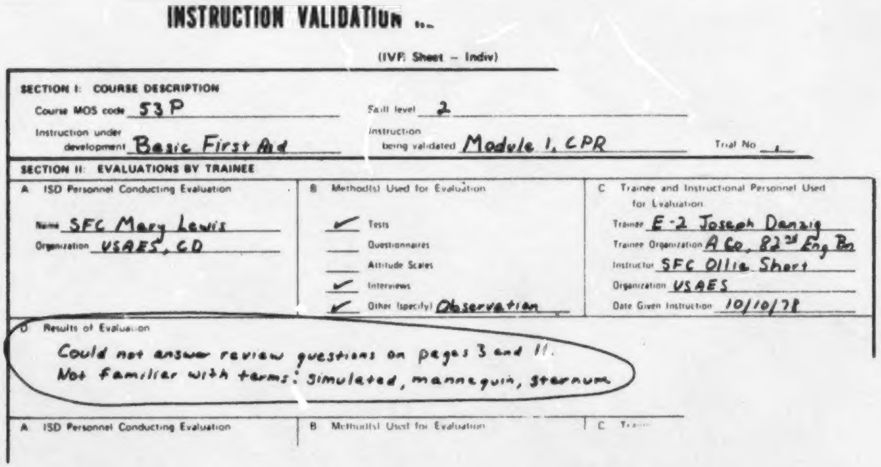
- Following are examples of types of information that should be recorded:
  - Patterns of correct and incorrect responses.
  - Indications of problem areas within the instructional material.
  - Trainees comments, where applicable.
  - etc.
- For further guidance, see below.

What type of information might I record on the IVR Sheet - Individual, Section II, Block D?

- Information gained from the validation process is recorded. Examples of the kind of information that should be recorded are:
  - a) areas of difficulty in understanding instructional material—e.g., the vocabulary level was too high for trainees.
  - b) areas of difficulty in the way the material was presented—e.g., the pace was too fast.
  - c) comments of trainees' that lead you to believe that revisions should be made—e.g., the material seemed to be boring.
  - d) ETC.

What does IVR Sheet - Individual look like when the results of the evaluation are recorded in Section II, Block D?

Example:



INSTRUCTION VALIDATIOn ...

(IVR Sheet – Indiv)

SECTION I: COURSE DESCRIPTION

Course MOS code 53 P

Skill level 2

Instruction under development Basic First Aid

Instruction being validated Module 1, CPR

Trial No 1

SECTION II: EVALUATIONS BY TRAINEE

A ISD Personnel Conducting Evaluation

Name SFC Mary Lewis

Organization USAES, CD

B Method(s) Used for Evaluation

✓ Tests

☐ Questionnaires

☐ Attitude Scales

✓ Interviews

✓ Other (specify) Observation

C Trainee and Instructional Personnel Used for Evaluation

Trainee E-2 Joseph Danzig

Trainee Organization A Co, 82nd Eng Bn

Instructor SFC Ollie Short

Organization USAES

Date Given Instruction 10/10/78

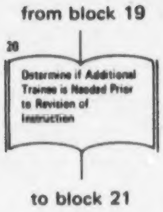
D Results of Evaluation

Could not answer review questions on pages 3 and 11.
Not familiar with terms: simulated, mannequin, sternum

A ISD Personnel Conducting Evaluation

B Method(s) Used for Evaluation

C Tra

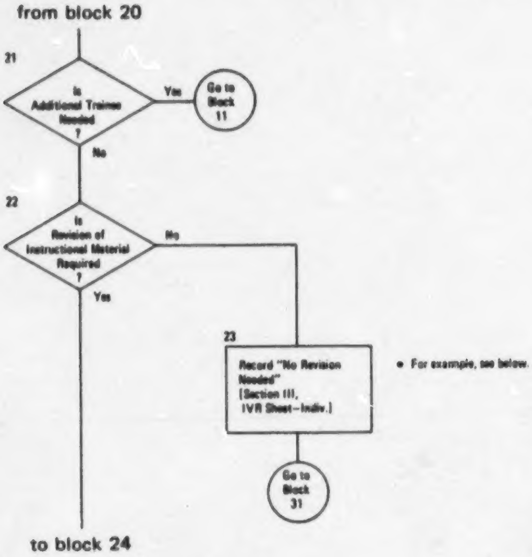

from block 19
20
Determine if Additional Trainee is Needed Prior to Revision of Instruction
to block 21

- For guidance in determining if an additional trainee should be used to evaluate the instructional material, see below.

How do I determine if an additional trainee is needed within a validation trial?

- Your own judgment becomes very important here. The decision to use another trainee before revisions are made should be based on whether or not you see some pattern to the types of responses you are getting. Once a pattern has been established (i.e., you are getting just about the same information from each individual) you can begin to plan for revision of material. Usually 3-5 trainees per trial constitute a good sample.

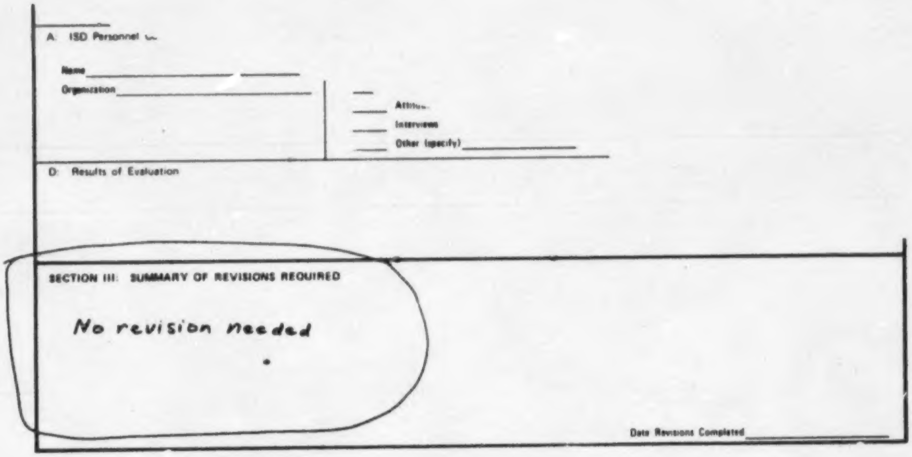
- Don't forget, you are working with a "law of diminishing returns." That is, most information will be obtained from the first few trainees. The results obtained from testing many more additional trainees may not be worth the time and effort that is involved.


from block 20
21
Is Additional Trainee Needed ?
Yes
Go to Block 11
No
22
Is Revision of Instructional Material Required ?
No
Yes
23
Record "No Revision Needed" [Section III, IVR Sheet–Indiv.]
Go to Block 31
to block 24

• For example, see below.

What does IVR Sheet - Individual, Section III look like when "No Revisions Needed" is recorded?

Example:



A: ISD Personnel

Name____________________

Organization____________________

____ Attitu

____ Interviews

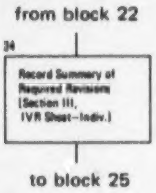
____ Other (specify)__________

D: Results of Evaluation

SECTION III: SUMMARY OF REVISIONS REQUIRED

No revision needed

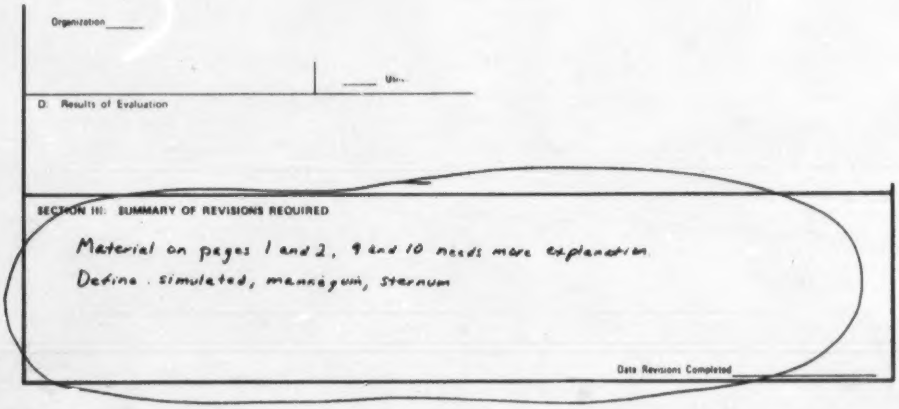
Date Revisions Completed__________


from block 22
24
Record Summary of Required Revisions (Section III, IVR Sheet—Indiv.)
to block 25

- For example, see below.

What does IVR Sheet - Individual look like when summary of required revisions is recorded in Section III?

Example:



Organization______

______ [illegible]

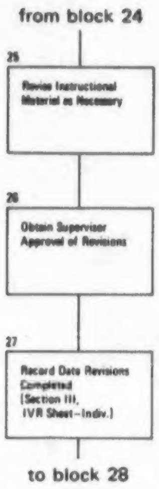
D. Results of Evaluation

SECTION III: SUMMARY OF REVISIONS REQUIRED

Material on pages 1 and 2, 9 and 10 needs more explanation

Define . simulated, mannaquin, sternum

Date Revisions Completed______

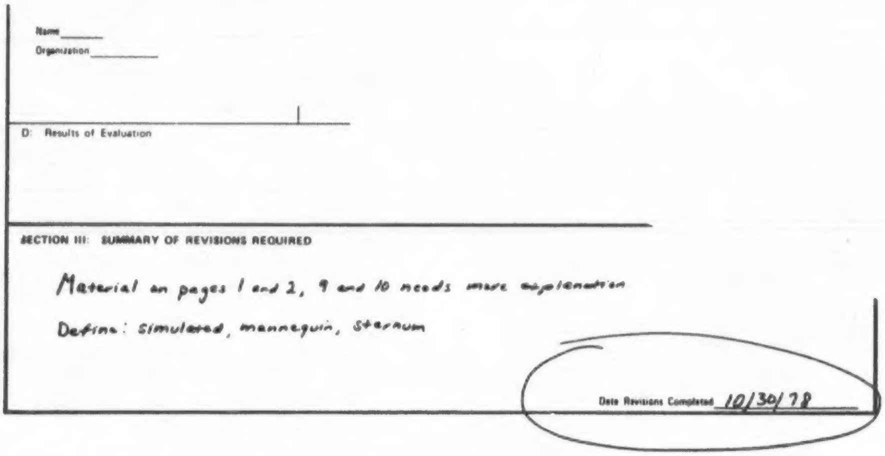

from block 24
25
Revise Instructional Material as Necessary
26
Obtain Supervisor Approval of Revisions
27
Record Date Revisions Completed (Section III, IVR Sheet–Indiv.)
to block 28

- Revisions will normally be made by the individual(s) who developed the instruction being evaluated.

- For example, see below.

What does IVR Sheet - Individual look like when date revision is completed is recorded in Section III?

Example:



Name______

Organization__________

D: Results of Evaluation

SECTION III: SUMMARY OF REVISIONS REQUIRED

Material on pages 1 and 2, 9 and 10 needs more explanation

Define: simulated, mannequin, sternum

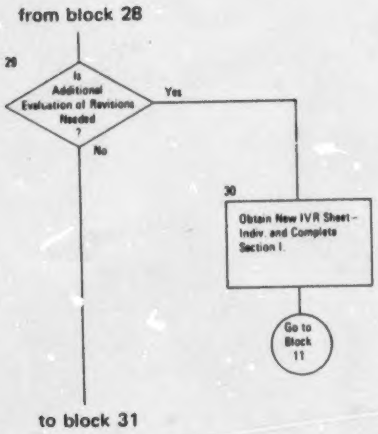
Date Revisions Completed 10/30/78

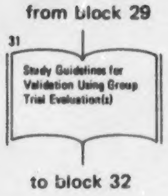
from block 27
28
Determine if Additional INDIVIDUAL Validation Trial is Needed
to block 29

- When revisions resulting from the previous Individual Validation Trial were extensive, an additional Individual Validation Trial may be desirable.
- For information and guidance, see below.

How do I determine if additional validation trials are needed?

- Generally, the decision as to whether additional Individual Validation Trials are needed will be based on such considerations as:
  - a. If the previous Individual Validation Trial indicated that no revisions were needed, then additional Individual Validation Trials are not needed.
  - b. The previous validation trial may have disclosed a "bug" which required immediate correction. (i.e., you didn't even get through all the material.) In this situation you would need an additional Individual Validation Trial.
  - c. A large number of revisions have been made as a result of the previous validation trial. You will probably want to have an additional Individual Validation Trial to determine that you have not introduced new "problems" as a result of the revisions.
  - d. Whenever in doubt, conduct another Individual Validation Trial.


from block 28
29
Is Additional Evaluation of Revisions Needed ?
Yes
No
30
Obtain New IVR Sheet - Indiv. and Complete Section I.
Go to Block 11
to block 31


from block 29
31
Study Guidelines for Validation Using Group Trial Evaluation(s)
to block 32

- Guidelines explain the process and procedures used in a validation trial in which a group of trainees is used to evaluate the instruction material.
- For guidelines, see below.

What guidelines should be followed in conducting validation using group trial evaluation?

- **CONDUCTING GROUP EVALUATIONS:**

  — The reason for trying out instruction on a group of trainees is to determine how that portion of the instructional system functions under conditions similar to the actual classroom situation. Too, it is more economical to gather data concerning the effectiveness of instruction from groups than it is from individuals. Therefore, validation trials are expanded to groups of trainees as soon as satisfactory results are obtained with individual trials.

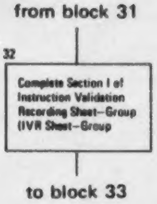
  — At this point in validation, time becomes a factor. It is not sufficient that a trainee learns the material in an instructional sequence; the trainee must also complete it within a reasonable period of time. Therefore, in a group trial, the time needed by each trainee to complete an instructional unit should be tabulated in addition to recording the accuracy of trainee responses.

  — Some effort should be made to establish the maximum number of trials the trainee would be permitted in order to reach criterion performance. Trainees who are allowed continuous trials and still do not attain success become frustrated and agitated. These behavioral reactions do not complement the training effort. A remedial program with a new approach or smaller steps may well be the alternative.

- **USE OF GROUP EVALUATION RESULTS:**

  — The group trial should be a success because of the nature of the procedures for individual trials. It is likely that any instructional changes will be minor. As in the individual trials, if a segment of instruction undergoes a significant revision, another group of trainees should be given the modified instruction until additional data is gathered and final revisions are made.

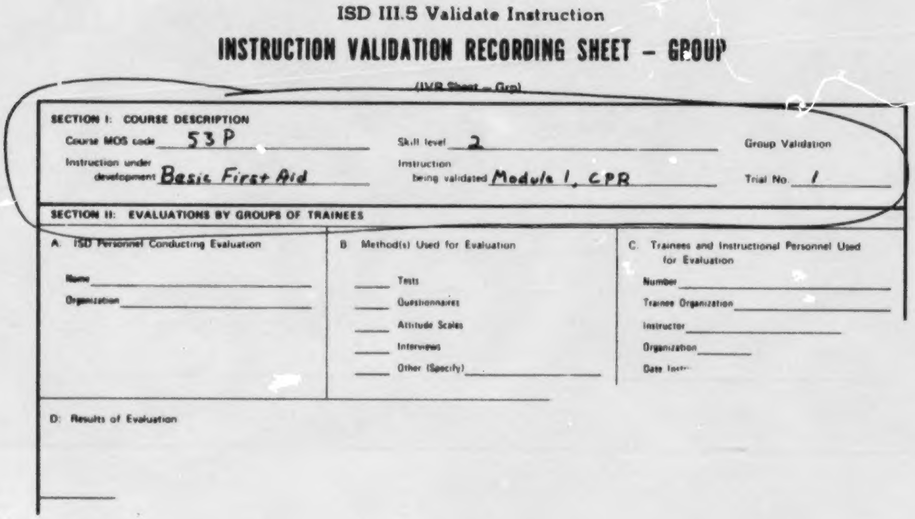
  — This cycle of teaching, testing, analyzing, and modifying is continued until it is proven that the trainees can perform to the level specified in the standards for the objectives.


from block 31
32
Complete Section I of Instruction Validation Recording Sheet–Group (IVR Sheet–Group
to block 33

- Instruction Validation Recording Sheet–Group, is on reverse side of IVR Sheet–Indiv.
- For example, see below.

What does Instruction Validation Sheet - Group (IVR Sheet - Grp) look like when Section I has been completed?

Example:



ISD III.5 Validate Instruction

INSTRUCTION VALIDATION RECORDING SHEET – GROUP

(IVR Sheet – Grp)

SECTION I: COURSE DESCRIPTION

Course MOS code 53 P

Skill level 2

Group Validation

Instruction under development Basic First Aid

Instruction being validated Module 1, CPR

Trial No. 1

SECTION II: EVALUATIONS BY GROUPS OF TRAINEES

A. ISD Personnel Conducting Evaluation

Name ____

Organization ____

B. Method(s) Used for Evaluation

____ Tests

____ Questionnaires

____ Attitude Scales

____ Interviews

____ Other (Specify) ____

C. Trainees and Instructional Personnel Used for Evaluation

Number ____

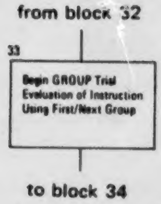
Trainee Organization ____

Instructor ____

Organization ____

Date Inst

D: Results of Evaluation


from block 32
33
Begin GROUP Trial
Evaluation of Instruction
Using First/Next Group
to block 34

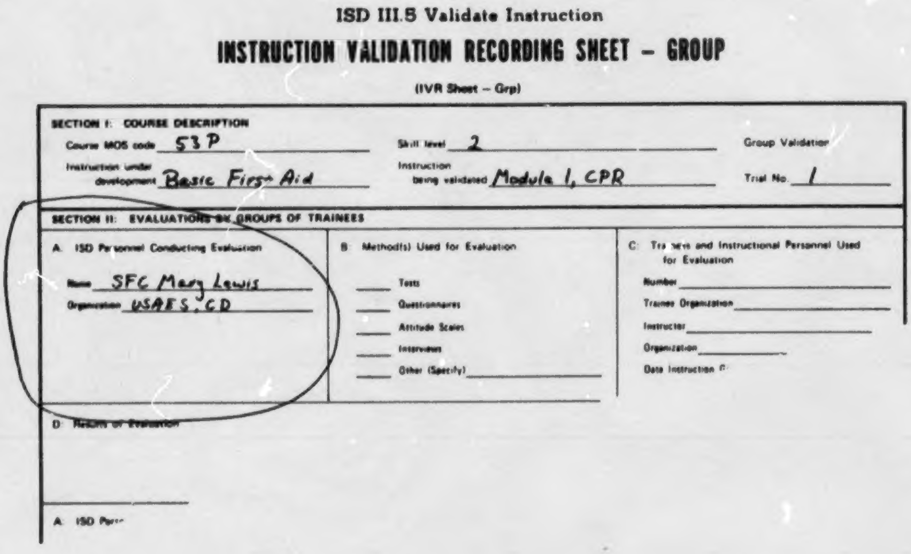
- This block begins the Group Validation Trial(s) process.

from block 33
34
Record ISD Personnel Conducting Evaluation (Section II, Block A, IVR Sheet–Grp)
to block 35

- The name and organization of the individual(s) conducting the evaluation is recorded.
- For example, see below.

What does IVR Sheet - Grp look like when personnel conducting evaluation has been recorded in Section II, Block A?

Example:



ISD III.5 Validate Instruction

INSTRUCTION VALIDATION RECORDING SHEET – GROUP

(IVR Sheet – Grp)

SECTION I: COURSE DESCRIPTION

Course MOS code 53P

Skill level 2

Group Validation

Instruction under development Basic First Aid

Instruction being validated Module 1, CPR

Trial No. 1

SECTION II: EVALUATIONS BY GROUPS OF TRAINEES

A. ISD Personnel Conducting Evaluation

Name SFC Mary Lewis

Organization USAES, CD

B. Method(s) Used for Evaluation

___ Tests

___ Questionnaires

___ Attitude Scales

___ Interviews

___ Other (Specify) ______

C. Trainees and Instructional Personnel Used for Evaluation

Number ______

Trainee Organization ______

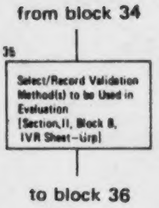
Instructor ______

Organization ______

Date Instruction

D. Results of Evaluation

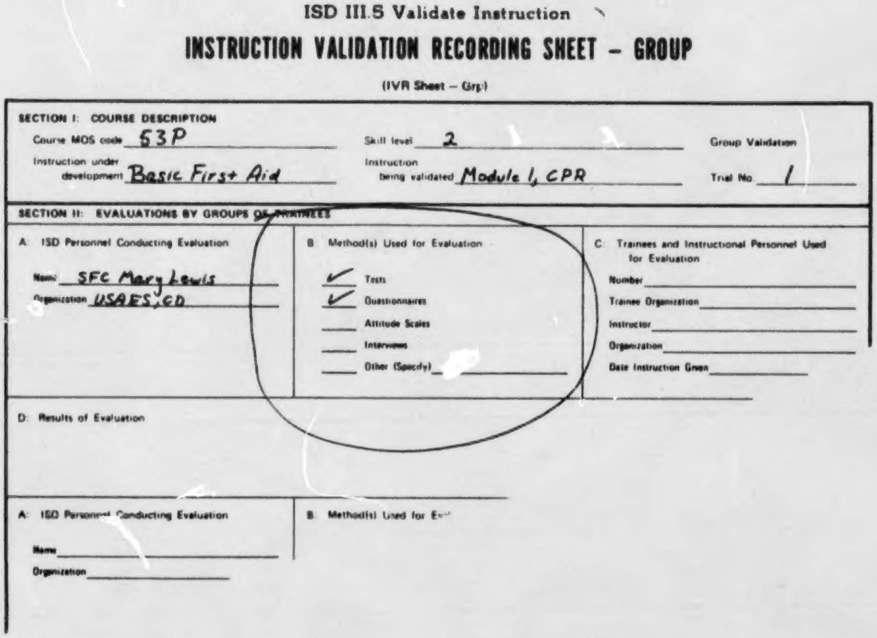
A. ISD Pers


from block 34
35
Select/Record Validation Method(s) to be Used in Evaluation [Section II, Block B, IVR Sheet–Grp]
to block 36

- The validation method(s) used in Group Validation Trials are the same as for Individual Validation Trials. They are:
  - Tests
  - Questionnaires
  - Attitude Scales
  - Interviews
  - Observation
  - Other methods specific to the training situations.
- For example of how to record validation methods, see below.

What does IVR Sheet - Grp look like when validation method(s) have been recorded in Section II, Block B?

Example:



ISD III.5 Validate Instruction

INSTRUCTION VALIDATION RECORDING SHEET – GROUP

(IVR Sheet – Grp)

SECTION I: COURSE DESCRIPTION

Course MOS code 53P

Skill level 2

Group Validation

Instruction under development Basic First Aid

Instruction being validated Module 1, CPR

Trial No. 1

SECTION II: EVALUATIONS BY GROUPS OF TRAINEES

A: ISD Personnel Conducting Evaluation

Name: SFC Mary Lewis

Organization USAES, CD

B: Method(s) Used for Evaluation

✓ Tests

✓ Questionnaires

____ Attitude Scales

____ Interviews

____ Other (Specify)____

C: Trainees and Instructional Personnel Used for Evaluation

Number____

Trainee Organization____

Instructor____

Organization____

Date Instruction Given____

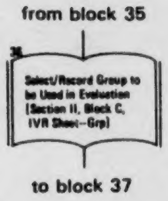
D: Results of Evaluation

A: ISD Personnel Conducting Evaluation

Name____

Organization____

B: Method(s) Used for Ev


from block 35
36
Select/Record Group to be Used in Evaluation (Section II, Block C, IVR Sheet--Grp)
to block 37

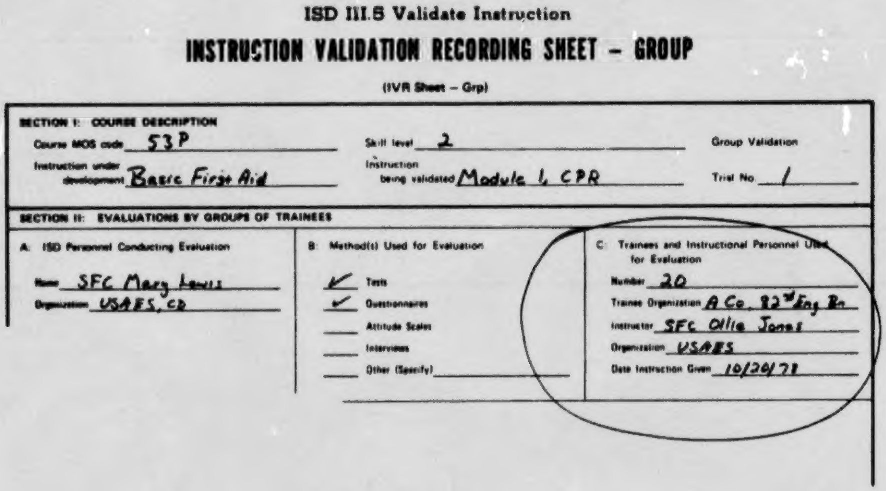
- Groups of trainees who are representative of the target population are selected as subjects.
- For further guidance, see below.

How do I choose a sample of trainees to conduct a group trial validation?

- **GROUP TRAINEE SAMPLING:**
  - The trainees selected for this phase of validation should also represent the target population. The selections should include an even distribution of low, average, and high aptitude trainees.
  - Up to this point, the success of the system may have been a result of limiting trainee sampling to those with the higher aptitudes. Now you need to see if the same instruction is just as efficient in teaching trainees with lesser ability. Trainees with lower aptitudes should be able to accomplish the assigned learning tasks, though it may take them longer to complete the sequence. complete the sequence.

What does IVR Sheet - Grp. look like when Section II, Block C, "Trainees and Instructional Personnel Used for Evaluation" is filled in?

Example:



ISD III.5 Validate Instruction

INSTRUCTION VALIDATION RECORDING SHEET – GROUP

(IVR Sheet – Grp)

SECTION I: COURSE DESCRIPTION

Course MOS code 53P
Skill level 2
Group Validation
Instruction under development Basic First Aid
Instruction being validated Module 1, CPR
Trial No. 1

SECTION II: EVALUATIONS BY GROUPS OF TRAINEES

A: ISD Personnel Conducting Evaluation

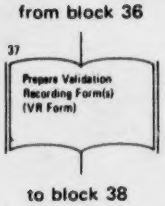
Name SFC Mary Lewis
Organization USAES, CD

B: Method(s) Used for Evaluation

✓ Tests
✓ Questionnaires
___ Attitude Scales
___ Interviews
___ Other (Specify) ______

C: Trainees and Instructional Personnel Used for Evaluation

Number 20
Trainee Organization A Co. 82d Eng Bn
Instructor SFC Ollie Jones
Organization USAES
Date Instruction Given 10/20/78



- Validation Recording Forms for Group Validation Trials are essentially the same as for Individual Validation Trials. They include:
  - Questionnaires
  - Attitude Scales
  - Interview Forms
  - Observation
- For guidance in preparing Validation Recording Forms, see below.

How do I prepare Validation Recording Forms (VR Forms) for groups of trainees?

- The guidelines given on pages M-21 through M-24 of this manual for preparing VR Forms for individual trainees also apply to groups of trainees.

- In addition, you will probably want to prepare a form that will enable you to see at a glance which areas of the unit of instruction are causing difficulty for your group. This would probably take the form of a summary table. It would need to convey the following types of information:

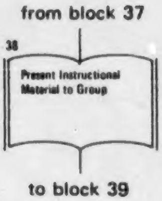
  1) Trainees' responses
  2) Number of trainees making a particular response
  3) Number of questions
  4) Number of trainees passing each question
  5) Number of trainees constituting each group
  6) ETC.

For Example:

DATA SUMMARY

KEY: + Right
- Wrong

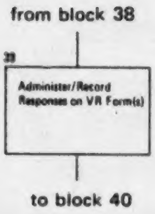
Learning Objective		Participant A	Participant B	Participant C	Participant D	Total
	Entry Level Test					
2	1a	+	+	+	-	3
2	1b	+	+	+	+	4
3	2	+	+	-	-	3
4	3	+	+	+	+	4
1 & 2	4	+	+	+	-	3
	TOTAL	5	5	4	2	
	Pretest					
1	1	-	+	+	-	2
1.	2	-	+	+	-	2
2	3	-	-	+	-	1
3	4	-	-	-	-	0
4	5	-	-	-	-	0
4	6	-	-	-	-	0
5	7	-	-	-	-	0
6	8	-	-	-	-	0
	TOTAL	0	2	3	0	
	Within Lesson Questions (Slide)					
1	3	-	+	+	-	2
1	7	+	+	+	-	3
1	12	+	+	+	-	3
2	16	-	-	-	-	0
2	17	+	+	+	+	4
3	22	+	-	-	+	2
3	23	+	-	+	-	2
3	24	+	+	+	-	3
4	30	-	-	+	-	1
5	41	+	+	+	+	4
5	42	+	+	+	+	4
6	53	+	-	+	-	2
6	56	-	-	-	-	0
	TOTAL	9	7	10	4	
	Posttest					
1	1	+	+	+	-	3
1	2	-	+	+	-	2
2	3	+	+	+	-	3
3	4	+	+	-	-	2
4	5	+	+	+	-	3
4	6	-	+	+	-	2
5	7	+	+	+	+	4
6	8	-	-	-	-	0
	TOTAL	5	7	6	1	



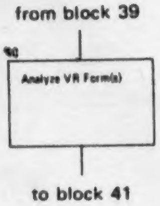
- Methods are discussed for presentation of the instructional material to a group of trainees.
- For further information, see below.

What factors do I consider in presenting instructional material during group validation trials?

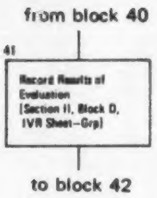
- For administration of Group Validation Trials you should duplicate the actual instructional situation as nearly as possible.
  1. Use instructional personnel who will normally give this particular instruction.
  2. Use the actual instructional setting (i.e., classroom, lab, etc.)
  3. Have all equipment, tools, etc. available.
  4. To the extent possible have available all auxiliary material (handouts, slides, displays, etc.).
- The personnel conducting the validation trial (you) should try to maintain a low profile. You do not want to influence the outcome of the validation trial.


from block 38
39
Administer/Record Responses on VR Form(s)
to block 40

- Forms may be filled out by trainees (attitude scale), instructor (comments), validation team (interviews).


from block 39
40
Analyze VR Form(s)
to block 41

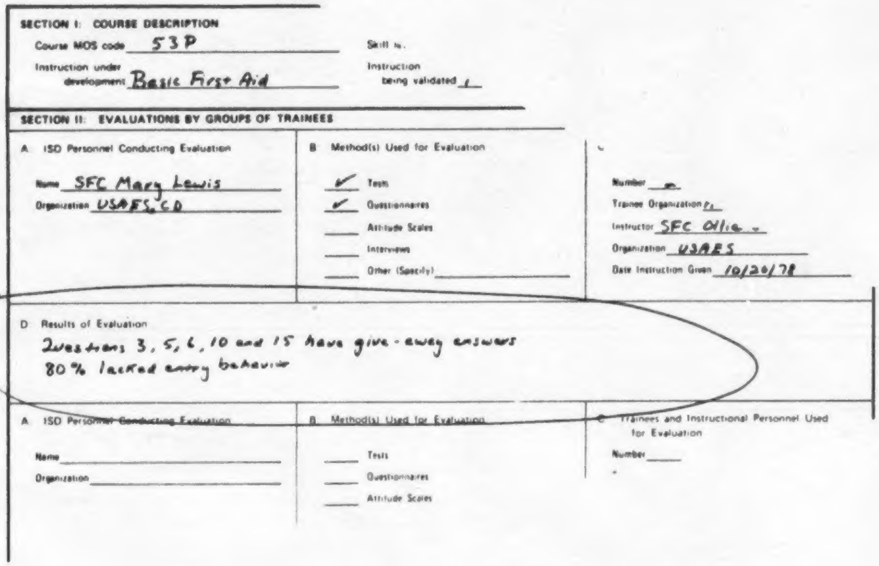
- Forms are analyzed for patterns within the group or other information indicative of whether or not revision of material is necessary.


from block 40
41
Record Results of Evaluation (Section II, Block D, IVR Sheet—Grp)
to block 42

- For example, see below.

What does IVR Sheet - Grp. look like when results of evaluation are recorded in Section II, Block D?

Example:



SECTION I: COURSE DESCRIPTION

Course MOS code 53P

Skill le.

Instruction under development Basic First Aid

Instruction being validated 1

SECTION II: EVALUATIONS BY GROUPS OF TRAINEES

A. ISD Personnel Conducting Evaluation

Name SFC Mary Lewis

Organization USAES, CD

B. Method(s) Used for Evaluation

✓ Tests
✓ Questionnaires
___ Attitude Scales
___ Interviews
___ Other (Specify)

Number [illegible]

Trainee Organization [illegible]

Instructor SFC Ollie

Organization USAES

Date Instruction Given 10/20/78

D. Results of Evaluation

Questions 3, 5, 6, 10 and 15 have give-away answers
80% lacked entry behavior

A. ISD Personnel Conducting Evaluation

Name

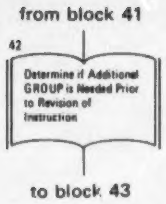
Organization

B. Method(s) Used for Evaluation

___ Tests
___ Questionnaires
___ Attitude Scales

C. Trainees and Instructional Personnel Used for Evaluation

Number

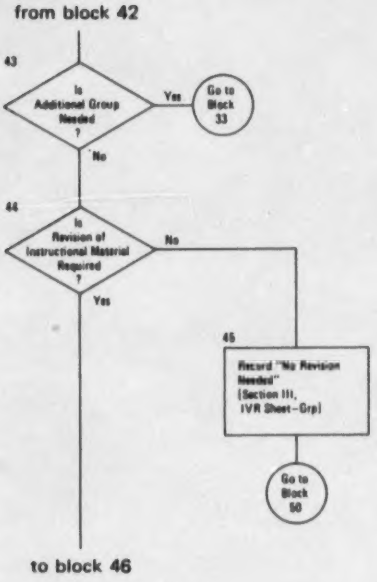

from block 41
42
Determine if Additional GROUP is Needed Prior to Revision of Instruction
to block 43

- For guidance, see below.

How do I determine if an additional group evaluation of the instructional material is needed before revisions are made?

- In general, you should follow the same guidance as was given for Individual Validation Trials (page M-28). Usually you will not require very many Group Validation Trials before a revision is made. Consider the following:

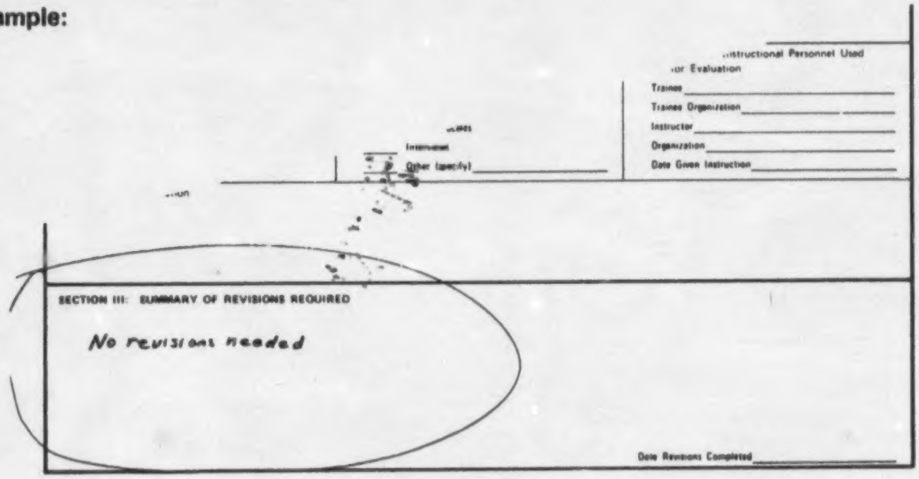
    1. If a problem is disclosed that effect a large percentage of the trainee group you can be fairly certain that this is indeed a problem for the typical trainee. You would not need additional Group Validation Trials to confirm the existance of the problem.
    2. If only a few trainees in the group have a specific problem with the instruction you might want to consider having the instruction administered to another group to determine that revisions are indeed called for.


from block 42
43
Is Additional Group Needed ?
Yes
Go to Block 33
No
44
Is Revision of Instructional Material Required ?
No
Yes
45
Record "No Revision Needed" (Section III, IVR Sheet–Grp)
Go to Block 50
to block 46

• For example, see below.

What does IVR Sheet - Grp. look like when "no revision needed" is recorded in Section III?

Example:



istructional Personnel Used
or Evaluation

Trainee ____________

Trainee Organization ____________

Instructor ____________

Organization ____________

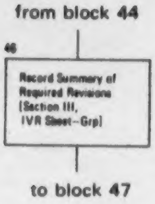
Date Given Instruction ____________

Other (specify) ____________

SECTION III: SUMMARY OF REVISIONS REQUIRED

No revisions needed

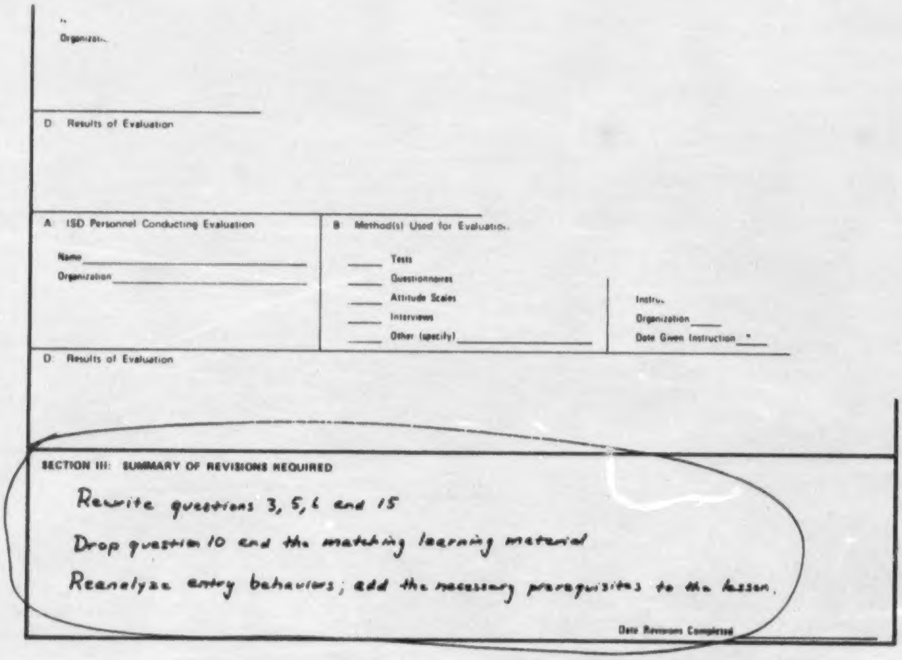
Date Revisions Completed ____________


from block 44
46
Record Summary of Required Revisions [Section III, IVR Sheet–Grp]
to block 47

- For example, see below.

What does IVR Sheet - Grp. look like when the summary of revisions is recorded in Section III?

Example:



Organizati

D Results of Evaluation

A ISD Personnel Conducting Evaluation

Name____________________

Organization____________________

B Method(s) Used for Evaluatio

____ Tests

____ Questionnaires

____ Attitude Scales

____ Interviews

____ Other (specify)____________

Instru

Organization____

Date Given Instruction____

D Results of Evaluation

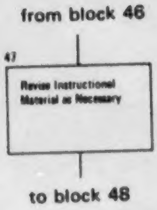
SECTION III: SUMMARY OF REVISIONS REQUIRED

Rewrite questions 3, 5, 6 and 15

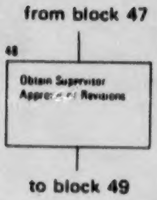
Drop question 10 and the matching learning material

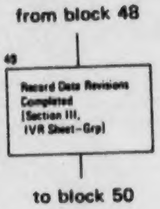
Reanalyze entry behaviors; add the necessary prerequisites to the lesson.

Date Revisions Completed____________


from block 46
47
Revise Instructional Material as Necessary
to block 48

- Revisions will normally be made by the individual(s) who developed the instruction being evaluated.

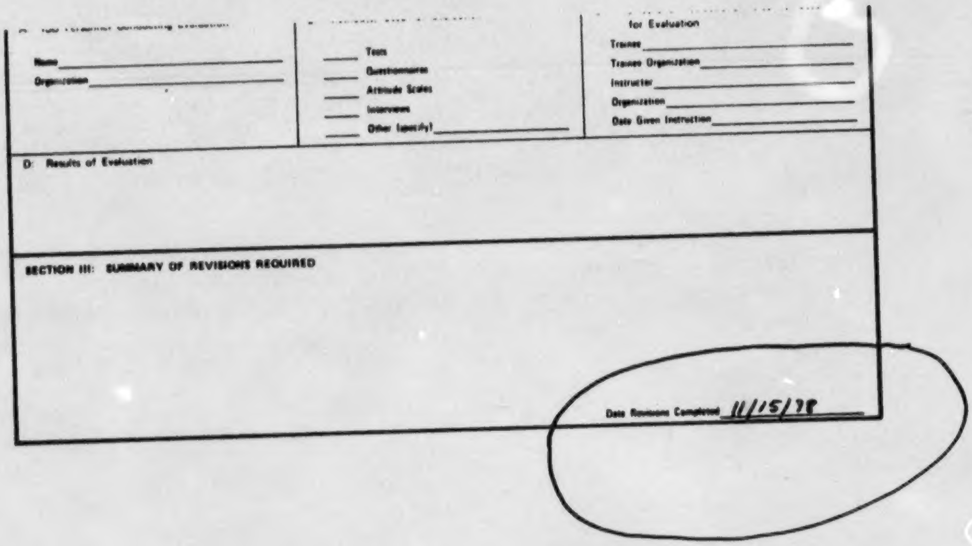

from block 47
48
Obtain Supervisor
Approval of Revisions
to block 49


from block 48
49
Record Data Revisions Completed (Section III, IVR Sheet–Grp)
to block 50

- For example, see below.

What does IVR Sheet - Grp. look like when the date that revisions have been completed are recorded in Section III?

Example:



Name__________

Organization__________

____ Tests
____ Questionnaires
____ Attitude Scales
____ Interviews
____ Other (specify)__________

for Evaluation

Trainee__________
Trainee Organization__________
Instructor__________
Organization__________
Date Given Instruction__________

D: Results of Evaluation

SECTION III: SUMMARY OF REVISIONS REQUIRED

Date Revisions Completed 11/15/78

from block 49
50
Determine if Additional Group Validation Trial is Needed
to block 51

- When revisions resulting from the previous Group Validation Trial were extensive, an additional Group Validation Trial may be desirable.
- For further information and guidance, see below.

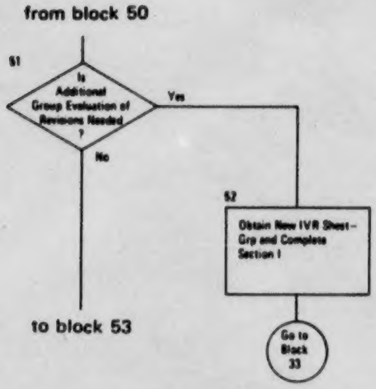
How do I determine if additional group validation trials are needed?

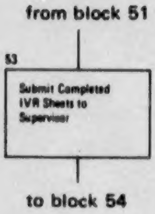
- The decision process for determining whether additional group validation trials are needed is similar to that for Individual Validation Trials for convenience, it is repeated, in part, here.
- Generally, the decision as to whether additional Group Validation Trials are needed will be based on such considerations as:

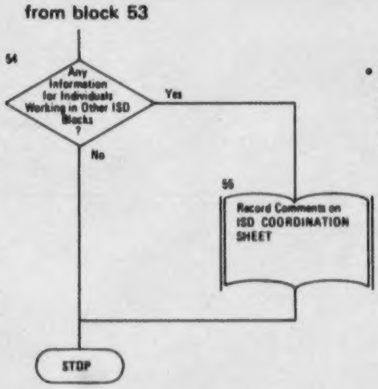
  a. If the previous Group Validation Trial indicated that no revisions were needed, then additional Group Validation Trials are not needed.

  b. The previous validation trial may have disclosed a "bug" which required immediate correction. (i.e., you didn't even get through the entire material.) In this situation you would need to have an additional Group Validation Trial.

  c. A large number of revisions have been made as a result of the previous validation trial. You will probably want to have an additional Group Validation Trial to determine that you have not introduced new "problems" as a result of the revisions.


from block 50
51
Is Additional Group Evaluation of Revisions Needed ?
Yes
No
52
Obtain New IVR Sheet–Grp and Complete Section I
Go to Block 33
to block 53


from block 51
53
Submit Completed IVR Sheets to Supervisor
to block 54


from block 53
54
Any Information for Individuals Working in Other ISD Blocks ?
Yes
No
55
Record Comments on ISD COORDINATION SHEET
STOP

- During the instruction validation process information may have been obtained that would be useful to persons who performed activities that fed into the Instruction Validation process. Similarly, information may have been obtained that would be useful to persons who will be engaged in Instructional Systems Development steps that follow this one.

- Comments are recorded and submitted to appropriate persons.
- For further guidance, see below.

What is the importance of preparing comments for people working in other steps of the instructional systems development process? How do I record them?

- In order for the Instructional Systems Development process to work effectively it is imperative that there be forward and backward communication between the people involved in the process. At some time or other you have probably complained about the input that has been provided to you. Sometimes, you may have had to work that should have been performed in previous steps.

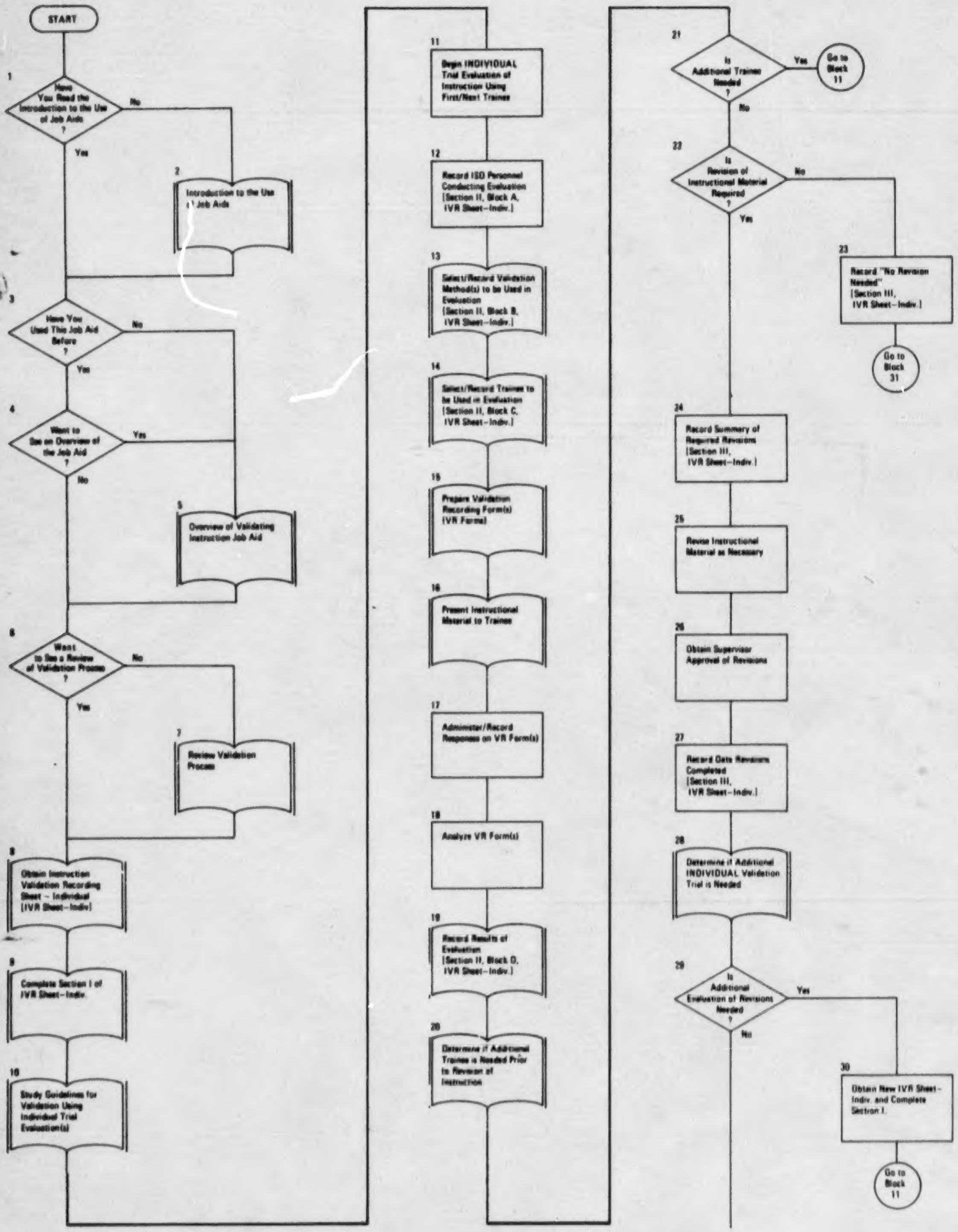
IT IS IMPORTANT THAT YOU FEED THIS INFORMATION BACK TO THE APPROPRIATE PEOPLE SO THAT REVISIONS CAN BE MADE TO EFFECT IMPROVEMENT IN THE END PRODUCT.

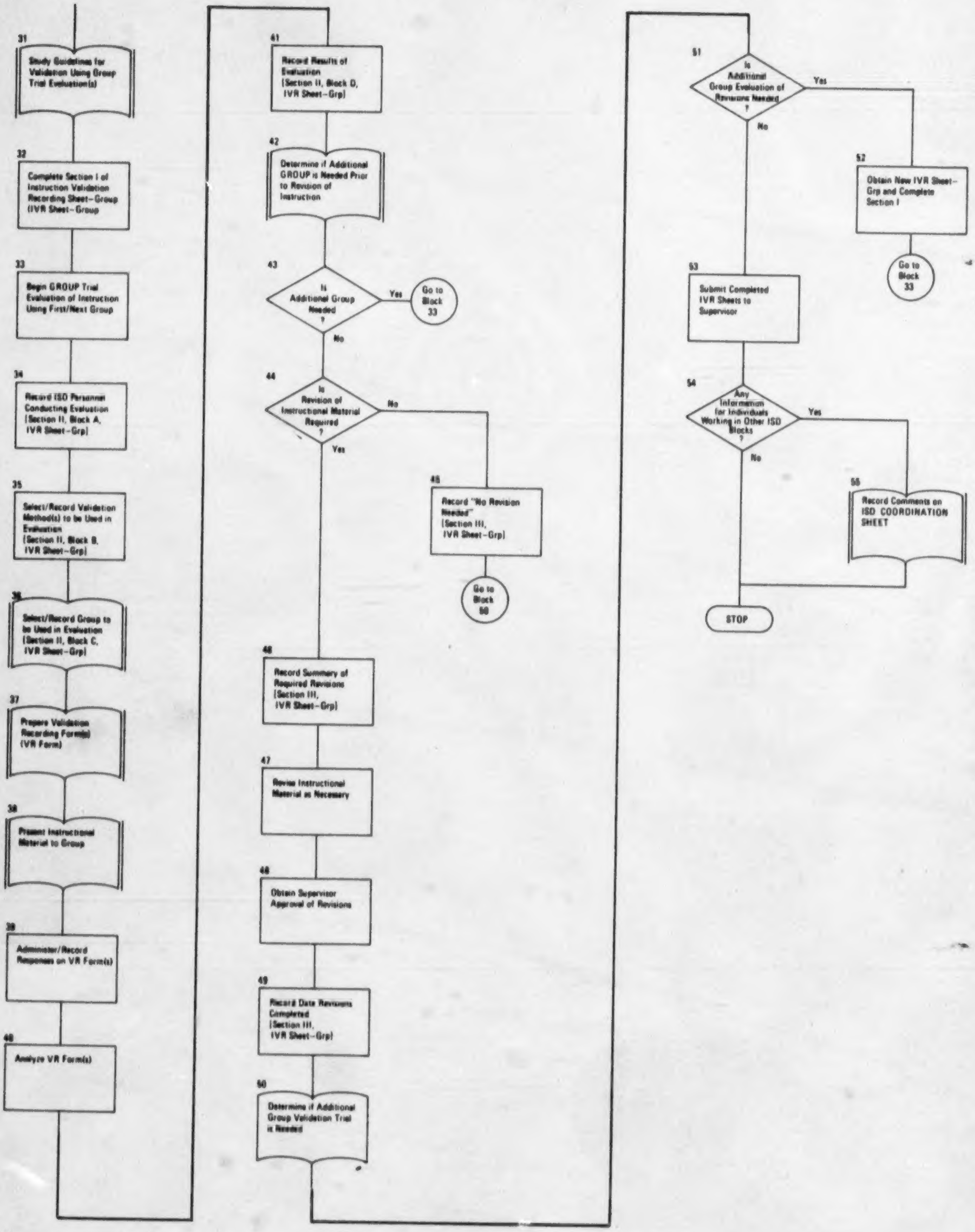
In your research for this step of the Instructional Systems Development process you may have discovered additional information that you think may be useful to people who will be working in steps that follow this one. If so, it is equally important that you pass this information on to appropriate people.

REMEMBER, COMMUNICATION WITHIN THE INSTRUCTIONAL SYSTEMS DEVELOPMENT PROCESS IS CRITICAL FOR EFFECTIVE INSTRUCTIONAL DEVELOPMENT FOR SUCCESSFUL MISSION-ACCOMPLISHMENT.

- A copy of the ISD COORDINATION SHEET can be found in the pocket at the end of this manual. Make sufficient copies to enable you to send one to every individual you wish to communicate with—plus copies for your records.

- Complete the ISD COORDINATION SHEET in duplicate. Send one copy to the individual and attach one copy to the Instruction Validation Recording Sheet (IVR Sheet).


START
1
Have You Read the Introduction to the Use of Job Aids ?
No
Yes
2
Introduction to the Use of Job Aids
3
Have You Used This Job Aid Before ?
No
Yes
4
Want to See an Overview of the Job Aid ?
Yes
No
5
Overview of Validating Instruction Job Aid
6
Want to See a Review of Validation Process ?
No
Yes
7
Review Validation Process
8
Obtain Instruction Validation Recording Sheet – Individual [IVR Sheet–Indiv]
9
Complete Section I of IVR Sheet–Indiv.
10
Study Guidelines for Validation Using Individual Trial Evaluation(s)
11
Begin INDIVIDUAL Trial Evaluation of Instruction Using First/Next Trainee
12
Record ISD Personnel Conducting Evaluation [Section II, Block A, IVR Sheet–Indiv.]
13
Select/Record Validation Method(s) to be Used in Evaluation [Section II, Block B, IVR Sheet–Indiv.]
14
Select/Record Trainee to be Used in Evaluation [Section II, Block C, IVR Sheet–Indiv.]
15
Prepare Validation Recording Form(s) (VR Forms)
16
Present Instructional Material to Trainee
17
Administer/Record Responses on VR Form(s)
18
Analyze VR Form(s)
19
Record Results of Evaluation [Section II, Block D, IVR Sheet–Indiv.]
20
Determine if Additional Trainee is Needed Prior to Revision of Instruction
21
Is Additional Trainee Needed ?
Yes
Go to Block 11
No
22
Is Revision of Instructional Material Required ?
No
Yes
23
Record "No Revision Needed" [Section III, IVR Sheet–Indiv.]
Go to Block 31
24
Record Summary of Required Revisions [Section III, IVR Sheet–Indiv.]
25
Revise Instructional Material as Necessary
26
Obtain Supervisor Approval of Revisions
27
Record Date Revisions Completed [Section III, IVR Sheet–Indiv.]
28
Determine if Additional INDIVIDUAL Validation Trial is Needed
29
Is Additional Evaluation of Revisions Needed ?
Yes
No
30
Obtain New IVR Sheet–Indiv. and Complete Section I.
Go to Block 11


31
Study Guidelines for Validation Using Group Trial Evaluation(s)
32
Complete Section I of Instruction Validation Recording Sheet–Group (IVR Sheet–Group
33
Begin GROUP Trial Evaluation of Instruction Using First/Next Group
34
Record ISD Personnel Conducting Evaluation [Section II, Block A, IVR Sheet–Grp]
35
Select/Record Validation Method(s) to be Used in Evaluation [Section II, Block B, IVR Sheet–Grp]
36
Select/Record Group to be Used in Evaluation [Section II, Block C, IVR Sheet–Grp]
37
Prepare Validation Recording Form(s) (VR Form)
38
Present Instructional Material to Group
39
Administer/Record Responses on VR Form(s)
40
Analyze VR Form(s)
41
Record Results of Evaluation [Section II, Block D, IVR Sheet–Grp]
42
Determine if Additional GROUP is Needed Prior to Revision of Instruction
43
Is Additional Group Needed ?
Yes
Go to Block 33
No
44
Is Revision of Instructional Material Required ?
No
Yes
45
Record "No Revision Needed" [Section III, IVR Sheet–Grp]
Go to Block 50
46
Record Summary of Required Revisions [Section III, IVR Sheet–Grp]
47
Revise Instructional Material as Necessary
48
Obtain Supervisor Approval of Revisions
49
Record Date Revisions Completed [Section III, IVR Sheet–Grp]
50
Determine if Additional Group Validation Trial is Needed
51
Is Additional Group Evaluation of Revisions Needed ?
Yes
No
52
Obtain New IVR Sheet–Grp and Complete Section I
Go to Block 33
53
Submit Completed IVR Sheets to Supervisor
54
Any Information for Individuals Working in Other ISD Blocks ?
Yes
No
55
Record Comments on ISD COORDINATION SHEET
STOP